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ORIGINAL ARTICLES.

SOME EFFECTS OF INFLUENZA ON THE HEART.[1]

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FIVE recurrent epidemics of influenza in as many years have taught both the profession and the people many things. "Grip" is no longer spoken of flippantly as one of Nature's practical jokes. It has earned for itself the most respectful consideration from its victims and the earnest study of medical men. I propose to consider some phases of but one class of its many effects, and that one which, while it has not escaped attention on the part of medical observers, has been less generally discussed than almost any other, namely, the effects of influenza upon the heart. In order to bring the subject systematically before you, representative cases showing the various manifestations of the disease upon the heart that have come under my observation will first be given. These will be analyzed, with the intention of ascertaining how the given effect is produced, and, finally, some therapeutic deductions will be drawn.

CASE I.—On February 11, 1895, I was called to see Mrs. D. W., aged forty-eight years, of neurotic temperament, with a gouty family history, for whom I had prescribed more or less frequently during the past two years, for disorders of digestion and nervous disturbances, but whose heart has always been sound. She had been ill three days with a sharp attack of influenza. Her temperature was 102.5°. She had severe headache, backache, and pains in the limbs, with moderate catarrhal symptoms.

On my second visit she complained of precordial distress and some dyspnea, and of an unusual action of the heart. The pulse was rapid and quite strong. The area of precordial dulness was slightly increased. The cardiac impulse was rapid and powerful, and the apex-beat displaced slightly to the left. On pressure below the ribs, upward and to the left, considerable tenderness was elicited. There was a distinct systolic murmur heard most clearly over the apex. There was marked general prostration and an exacerbation of neuralgic symptoms in the abdomen, which she had had on previous occasions. The temperature did not increase above that first noted, and at the end of two weeks had returned to the normal. The catarrhal symptoms were never especially severe and yielded to treatment easily. The precordial distress and dyspnea on exertion were the symptoms of first importance and persisted after the disappearance of the fever, the characteristic pains, and the catarrhal symptoms.

The heart has never regained its normal condition. It is now enlarged, with the apex more distinctly displaced outward and a little upward, and the murmur is still distinct, though the rhythm is perfect, and the sense of distress has disappeared, except upon unusual exertion.

CASE II.—Mrs. N. K. W., aged about sixty years, has been an invalid for five years, having had successive attacks of bronchitis, pleurisy, with effusion and without, cystitis, persistent indigestion, and, through it all, an irregular heart with some hypertrophy, though no definite valvular lesion could be detected. During the winter she had been unusually well, though requiring occasional medical attention, up to February 18th, when she was attacked by influenza. She had very little fever, considerable pain at the outset, a violent catarrh of the bronchi, and very early mental disturbance, with many delusions, all of a happy character. The symptoms that caused alarm were the early appearance of dyspnea and precordial distress, while the action of the heart was most irregular and imperfect. The cardiac impulse was feeble and very uneven in force and irregular in rhythm, as it had never been before. The heart-sounds were faint and tumultuous. There was every evidence of insufficient heart-force. While the lungs were hardly dull at all, and the râles were the coarse mucous râles of ordinary bronchial catarrh, the skin was purplish, relaxed, and often bathed in perspiration, and the extremities cold. Remedies that we are accustomed to rely upon had almost no effect whatever, even temporarily. The disease progressed to a rapid termination on the 24th, six days after its onset, the heart stopping in diastole, and respiratory action continuing for some time after any action of the heart could be detected. During this last illness no murmur could be heard.

CASE III.—Mrs. M. A. G., aged thirty-seven years, a German woman with six children, well built, fleshy, ordinarily well, save occasional fainting spells, called me March 1, 1895. She had then had influenza for three weeks. On this day she was in bed, completely prostrated, not being able to lift her head. Her face was dusky, her expression that of perfect apathy, her temperature 103°, her pulse 140, very weak and somewhat irregular in rhythm and in force, and the heart-sounds were faint, but there was no displacement of the organ nor were any murmurs to be detected. The liver-

[1] Read before the Syracuse Academy of Medicine, April 2, 1895.

dulness and the spleen were normal. There was no rash on the abdomen and there was no abdominal symptom, save vomiting. Her urine was scanty and heavy with urates, but contained no albumin and no sugar. There was but a very slight bronchial catarrh. The temperature remained above 101° for six days, and her pulse continued rapid and feeble. The temperature then gradually diminished, and on the ninth day was 97.5°, though no antipyretics, save small doses of salol, were given. As the temperature subsided, dyspnea and precordial distress were complained of, and, on the ninth day, repeated attacks of fainting with cyanosis occurred, during which it seemed as if she must die. The heart, beating very feebly and irregularly, responded to nitro-glycerin and caffein with whisky; and its action was maintained with small doses of digitalis.

On the tenth day the temperature again rose to 101°, and continued above the normal for five days more, during which the heart was more regular and stronger and the pulse less frequent. On again attaining a normal temperature the attacks of cardiac dyspnea supervened. The temperature then rose to 103°, and has been variable, but above the normal, to the present time. During her own illness her husband has had acute pleurisy with effusion, and her youngest child croup, both of which affected her by increasing the temperature and the action of her heart, and causing a recurrence of vomiting.

CASE IV.—S. L., aged twenty-two years, a vigorous young man of good personal and family history, was attacked by influenza February 2, 1895. On my first visit his temperature was 103.5°, pulse 120, tense and strong, the characteristic pains marked, and the bronchitis very severe, involving the smaller bronchi, but not presenting areas of pneumonic infiltration. The case progressed satisfactorily, and the fever, with the other symptoms, terminated on the seventh day. With the subsidence of the fever there was excessive prostration, and the pulse, previously high, diminished to 46 beats per minute, though perfectly regular, and so remained for five days, when it gradually resumed its normal rate of 74.

CASE V.—H. L., aged forty-three years, a professional man of full habit, and good family and personal history, became a victim of influenza in January, 1895. The case presented no unusual symptoms until convalescence seemed well established, when the pulse became quite suddenly and without any undue cause very rapid, running up as high as 174 per minute, and, on exertion, to a rate much higher. This was accompanied by a condition of marked weakness and sleeplessness. Careful examination of the heart failed to detect any organic changes.

The case progressed in this way, with gradual improvement, for about a week, when it rapidly ameliorated and the pulse returned to its normal, 78 per minute, and the lost strength was regained at a rate that was quite surprising.

In looking over this group of cases cursorily, it is evident that we have examples of very different cardiac conditions, including diseases of the endocardium, of the myocardium, and of the nervous mechanism that controls the action of the heart.

Before studying these more minutely, it is well to state the groundwork of my belief that such changes as were wrought were dependent upon, and not incidental to, influenza. It is now generally accepted that there is a specific bacillus of influenza, and that it has been demonstrated by Pfeiffer and confirmed by Canon, and so is called the Pfeiffer-Canon bacillus. It is found not only in the sputum but also in the blood. It is grown with difficulty, except on agar smeared with the blood of the patient from whom it is taken. Perhaps because of the difficulty in growing it, there has not, so far as I know, been success in isolating the specific toxin which is generated in the development of this bacillus, but inoculation-experiments with cultures of this bacillus on apes and other animals have succeeded in reproducing the symptoms that are seen in the original manifestations of the disease; and that these are due to a specific poison, a resultant of the growth of a specific bacillus, is no more to be doubted than in tetanus, in which the demonstration is complete. As in other infectious diseases, this toxic substance circulates in the blood-current, and we know clinically that it affects a wider range of tissues and organs than does any other of which we are cognizant. In the etiology of endocarditis, both simple and ulcerative, the influence of the toxins of the several infectious diseases is recognized as paramount. In the cases caused by rheumatism it is questioned by good observers whether the disease is an actual rheumatism of the valves, or is here also produced by the irritant action of some specific poison in the blood, the resultant of the growth of some specific germ.

As in other infectious diseases, so in influenza, the left side of the heart is first and most seriously affected, and, if a valve is affected, that side of it which is toward the on-rushing current of blood is the one that most keenly feels and expresses the irritation of the foreign toxic substance. Although in influenza the number of reported cases of acute endocarditis that have come under my observation is not large, still it is sufficient to establish the fact that both simple and malignant endocarditis may be caused by influenza. In the first case reported it is positive that acute endocarditis, of a type not severe, was developed in the course of the attack of influenza. The patient had been under my observation for some two years, and because of the gouty family history, and of her own manifestions of rheumatism, the heart had been repeatedly and recently examined, with negative results. The patient had never complained of any symptoms even remotely suggestive of cardiac disease. There had been no recent slight illness. The symptoms manifested, and the results of physical examination, and the present condition combine to establish absolutely

the opinion that acute endocarditis was produced by the poison of influenza, and that it has left a heart that has not yet and probably never will recover perfectly from its effects.

It is unfortunate that a post-mortem examination was not allowed in the second case presented. During the time of my care of this patient, a period of five years, the heart, though irregular in its action and somewhat hypertrophied, had been relied upon to carry her safely through the various diseases which she had developed. The physicians who had seen her in consultation had failed, as I had done, to diagnosticate any organic valvular lesion. I had often described her pulse as a "Lord Dundreary" pulse, for it had the peculiarity of gait of that celebrated character as portrayed by the lamented Sothern. There was sure to be a skip, but one never knew when to expect it, and sometimes the rhythm was completely interrupted by a series of agitated beats, very much like the steps of our hero when especially embarrassed. Digitalis steadied it, and it was frequently resorted to for this purpose. At the time of the attack of influenza the patient was better than for months, and I had seen her only at long intervals. Two days after the onset of influenza, with its catarrhal symptoms and the characteristic pains, the heart was prostrated. Its action was feeble, most irregular in rhythm and in force, and the circulation was carried on most imperfectly. There were early delirium and dyspnea, which deepened into orthopnea, so that in the last few days she could not breathe in the recumbent position, and was in constant labor to get breath at all. In this case, it seemed to me that the heart-muscle itself received the brunt of the blow, and, if a post-mortem examination could have been had, it would have been a disappointment not to demonstrate a diffuse myocarditis. That such an effect is possible seems reasonable from our clinical knowledge of myocarditis, depending as it almost always does upon the presence in the blood of a septic principle, and in at least some cases reported by Pawniski, of Warsaw, such results have been demonstrated as the effects of influenza.

In arriving at this conclusion, I am not unmindful of the very great difficulty in making an antemortem diagnosis of myocarditis, nor do I forget that the irregularity of the pulse, as observed for several years, was probably of neurotic origin. But the condition presented by this patient was so different from that of ordinary cases of heart-failure, not simply in degree, but in the character of the symptoms, and particularly in the action of the heart, that I cannot make myself believe that there was not some grave change in the validity of the heart itself; and if the absence of evidence of valvular disease is any proof that such does not exist, then the heart-muscle must have been the part that was involved.

Case III is a specimen of the more frequently observed cardiac complication in influenza of the typhoid type. It is doubtless due to the combined action of two causes: the heart-muscle itself is weakened by the long-continued fever and the deficient nourishment of the patient, and the nerve-centers, as well as the heart-ganglia, are weakened in the general prostration, so that in afebrile periods there occurs almost complete heart-failure. Many deaths have been reported in just such cases, and many other cases are reported in which the life has been saved only by the energetic use of the most powerful and rapidly acting cardiac stimulants.

Cases IV and V are examples of the disorders of the nervous mechanism controlling the rhythm of the heart. Many cases in these classes have been observed. There is but little question that the effect is due to the influence of the poison upon the nerve-centers or possibly to minute hemorrhages into the nerve-matter. If the function of the vagus is impaired, tachycardia results; if the effect is chiefly felt in the centers lower down, then bradycardia or cardiac irregularity would be produced. It is the rule that these manifestations occur late, at some period during or following convalescence, and these effects are often prolonged over a considerable period, even a year or more, though recovery almost always results in the end.

In most of the cases of influenza that we see there is a relaxed condition of the vascular system, to which attention should be drawn before making any observation on the treatment of these cases. Because of this relaxed condition of the arterioles and of the frequently observed weak heart, even early in the disease, it is never wise to prescribe any of the coal-tar preparations, before making a careful examination of the circulation of the patient, nor is it safe for druggists to dispense these remedies indiscriminately as they do. Indeed, it may be laid down as a law that it is only right to give phenacetin, antipyrin, or acetanilid in influenza when each dose is guarded by caffein or some equally good cardiac stimulant. Several fatalities have occurred by a neglect of this precaution, a precaution taught me by an instructive experience during the first epidemic in 1890. When used, the dose should not be large, three grains of antifebrin being an outside limit. For the same reason, the dilatation of the arterioles, digitalis is often least suited to this class of heart-weakness in influenza. If the heart-muscle is weak and its ganglia prostrated, the use of therapeutic doses of digitalis, by primarily contracting the arterioles, throws back upon the exhausted organ a weight of blood which it is insufficient to move, even with the added stimulation of digitalis, and it collapses. Certainly better results have been seen in my practice from the use of small doses of digi-

talis given with strychnin, than from the use of doses of ordinary size.

Strychnin is a remedy of very great value in these cases of cardiac depression. The experience of several epidemics has taught us that it is seldom desirable to use this drug for the usual nerve-prostration in the large doses necessary in the various paralyses following infectious diseases. Small doses given at more frequent intervals have given better results.

Nitro-glycerin has given good results in the cases of collapse, but, because of the vascular dilatation already present, it is not an appropriate remedy to use long, and it is inferior to alcohol, except possibly in emergencies.

Few therapeutists would be willing to give up alcohol entirely in the treatment of these cases. There may be discovered some efficient substitute for a pure whisky, or an old brandy, or a good sound wine rich in ethers; but the utterances of men both in this country and England, whom we all admire and revere, have failed to establish the fact that such a substitute has already been found.

Aromatic spirit of ammonia, ammonium carbonate and the chlorid have their place; but in my experience are most valuable in the cases presenting a high grade of bronchitis or broncho-pneumonia.

The proper nourishment of the patient is of the greatest importance. Because of the heart and its tendency to reflect the disturbances felt in the gastro-intestinal tract, the food should be easy of digestion, administered in small quantities and at such intervals as not to embarrass the digestion. Beef-juice, egg-albumin, and milk, predigested if necessary, may be depended on.

In a disease occuring so frequently and affecting so large a number of people at once, the physician, from sheer monotony and weariness, is in danger of making superficial examinations and of getting into a routine in his methods. Therefore it is that there are large possibilities of error in diagnosis and many chances for overlooking important lesions.

The subject discussed teaches the lesson that the heart should be continuously watched in every case of influenza.

A RATIONAL DIABETIC FLOUR.[1]

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"GIVE us our daily bread"—this utterance of the faithful shows that bread is the recognized, most essential, and most important foodstuff to civilized man. In health and disease it forms his foremost nutriment. Thus by nature, habit, and custom humanity asks for bread and thrives on it, and when this article of food has been withheld or withdrawn from a person by famine, by high taxes, or by an over-zealous physician, that person might get along with other nourishment for a time, but will perish at the end from lack of proper food. The bodily constitution of civilized man demands some kind of breadstuff of which, it is true, it might be deprived temporarily and partially, but never for a long period or completely.

This fact has been recognized by some modern physiologists and observers who do not object to bread in small quantities as a part of the diet in diabetes mellitus. The complete and sudden deprivation of the system of breadstuffs it has heretofore been accustomed to, undoubtedly produces more harm in a diabetic patient than a moderate use of that article of nutriment. (To stop wholly the saccharine supply is also not what is wanted, for were we to do so we would finally arrest every function of animal life.) Neither on its duration nor upon the percentage of sugar depends the severity of diabetes mellitus, but upon the general power of resistance of the body and the vitality of the non-affected organs; and the power of resistance and vitality must be sustained, even if an additional one-tenth of 1 per cent. of diabetic sugar may be demonstrated in the urine.

With the view of supplying properly adapted and suitable breadstuffs for diabetes the so-called "Diabetic Flours" have sprung into existence; and it is claimed that they are free, or nearly free, from carbohydrates. All these flours contain, however, large quantities of starch—from 30 per cent. to 70 per cent., as Purdy puts it. The widely advertised gluten flour of one health-food company, for instance, for which it is claimed that it is entirely free from starch, contains 66.18 per cent. of that article. It seems beyond our means at the present day to extract to a sufficient degree the carbohydrates of the marketable grains; in fact, if a complete extraction of the starchy principles of our grains could be accomplished, there would be very little left to make a satisfactory article of food. Bouchardat's gluten flour is obtained by washing wheat flour. It is evident that only small quantities of starch can be extracted by this process. A method of extracting the starch from bread was recommended by Liebig. Thin slices of bread were treated with an extract of malt to convert the starch into sugar, which could be dissolved out by maceration and washing. The bran-bread of Prout, which contains a great percentage of cellulose, has not proved to be a desirable food for diabetics on account of its indigestibility and of its irritative action on the mucous membranes of the intestinal canal. The Soya bread and the aleuronaut bread of Ebstein have also been used in the dietetic treatment of diabetes without

[1] Read before the Manhattan Clinical Society, April 16, 1895.

having achieved universal recognition and employment. The proportionally best substitute for wheat or rye to-day yet is the almond. Almond-bread was first introduced by Pavy. The almonds having been ground into small pieces undergo a process of maceration with acidulated water for the extraction of their sugar. If some butter and eggs be added to this almond-meal, a good-tasting bread can be baked, which, if not properly prepared, is very hard and oily, and not fit for digestion. Almonds, however, are very expensive, and this is one of the reasons that bread made from them is not more universally employed by diabetics.

A long time since I recognized the fact that *a completely decarbohydrated meal at a price convenient to every one cannot be obtained from any of the cereals;* that such a completely decarbohydrated meal is *not essential,* but is even a drawback in a rational diet of the diabetic; and that a meal like that of the almonds, partially unoiled and with a small percentage of carbohydrates, at a mere nominal cost, is the desideratum. After a series of experiments I came to the conclusion that such a meal can be obtained from the peanut.

The peanut[1] (*Arachis hypogæ*), also known as ground-pea, ground-nut, earth-nut, goober, and pindar, is an annual, growing from one to two feet high; it has the peculiar habit of wintering its fruit underground. It is not a nut at all in the true sense of the term, and should be with more propriety called ground-pea. After the fall of its flower the peduncle elongates and bends downward, pushing several inches into the ground, where the ovary at its extremity begins to enlarge and develops into a pale-yellowish, wrinkled, slightly curved pod, often contracted in the middle, and containing from one to three seeds. When fully grown the pods are from one to two inches long and of a yellowish color.

More or less abundantly scattered over the roots of the peanut plant are warts of about the size of a pin-head. These so-called tubercles are of great importance to the life of the plant. Within them, while in a fresh or growing state, immense numbers of minute organisms can be detected. These organisms live partly on the substance supplied from the roots, and at the same time they take from the air and elaborate for the use of the plant considerable quantities of nitrogen. In this manner a quantity of nitrogen is often acquired by the plant far in excess of the amount of that element contained in the neighboring soil. The peanut, though it has been cultivated for centuries in Eastern countries—in China, Japan, the East Indies, and Africa—seems to be a native of Brazil. Thus America, which gave to the world cotton, Indian corn, the potato, and tobacco, is also the home of an additional plant of commercial importance. The merits of the peanut, however, had been recognized much earlier in other parts of the globe than in its native country, and virtually only since 1866 has the crop become of importance in some parts of this country. Virginia, North Carolina, and Tennessee produce most of the peanut crop of the United States, which, on account of a wrong method of culture, is not so plentiful now-a-days as it has been in years past.

The most interesting point for us to consider is the chemic composition of the peanut. I abstain from giving the food-constituents of all the different parts of the peanut plant, the kernels being the only portion of the plant concerning us. We find in the Alabama peanut-kernel 10.88 per cent. of water, and in the water-free substance of the kernel 4.26 per cent. of ash, 35.37 per cent. of protein, 2.66 per cent. of fiber, 19.33 per cent. extract-free of nitrogen, 55.37 per cent. of fat, and 5.50 per cent. of nitrogen. The average of all available analyses of peanut-plants of different crops and different sections of the earth shows 29 per cent. of protein, 49 per cent. of fat, and 14 per cent. of carbohydrates in the dry material.

Peanut-meal (as known in commerce) is the remaining part (the residue) of the peanut after the oil has been extracted. The oil is extracted on a large scale in European countries and utilized as a substitute for olive-oil, for lubricating purposes, and in the manufacture of soap. The meal contains, as the averages of 2000 analyses show, about 52 per cent. of protein, 8 per cent. of fat, and 27 per cent. of carbohydrates, and is therefore a most concentrated and valuable animal food. The peanut-meal, or peanut-cake as it is commonly called, is of a quite agreeable taste and not very hard to digest. Following this is given a comparison made by Professor König, based on the price in Germany of the following twelve principal foods reduced to "units of nutrition:"

COMPARISON OF THE NUTRITIVE VALUE AND COST OF TWELVE PRINCIPAL FOODS.

	Nutrive units per pound.	Cost per 1000 units in cents.
Skimmed milk	98.20	10.4
Skimmed-milk cheese	870.00	11.0
Full milk	155.50	11.5
Bacon	1257.70	15.5
Butter	1186.30	20.4
Veal	525.90	22.2
Beef	530.90	26.0
Peas	778.60	4.2
Potatoes	138.20	5.1
Rye-flour	603.60	6.0
Rice	534.60	10.0
Peanut-meal	1425.00	3.0

This shows that peanut-meal is the most nutritious and the cheapest of this list of foodstuffs.

[1] The following data and points of information are obtained from Farmers' Bulletin, No. 25, published by the U. S. Dept. of Agriculture, 1895.

Satisfied that the peanut is one of the most perfect, and at the same time one of the cheapest foodstuffs known to us, a foodstuff abundant in nitrogenous and fatty matter, but very deficient in carbohydrates, I began to utilize it with diabetic patients, and my method of preparing what I call the "diabetic peanut-flour" is a very simple and empiric one, and only destined to be employed domestically. I do not intend to give in the following a process of manufacture on a large scale; but no doubt, if this peanut-flour should prove to be a permanent success in the dietetic treatment of diabetes, the proper means to obtain the flour in large quantities can be easily devised.

The peanut-kernels, including their inner coating, which is also nutritious and not very abundant in carbohydrates, are put in a tin kettle, into which small holes have been previously made. This is kept uncovered and placed on or into a pan filled with water, and this has to be kept boiling for about half an hour to allow partial extraction of the superfluous oil. After the kernels have been dried they are pounded into fine particles with the aid of a rolling-pin. The pounded or bruised kernels are then placed in boiling water acidulated to some degree with tartaric acid or vinegar, preferably with the latter. The boiling in the acidulated water has to be continued for some time for different reasons:

1. For the extraction of saccharine elements, occurring to some amount in nuts of American growth. (Peanut-flour naturally contains proportionally small quantities of saccharine principles, which have to remain to some extent in the flour for reasons given.)

2. To overcome the smell and taste characteristic of the peanut.

3. To prevent emulsification of the remaining oil, which, to some degree, is essential to a rational diabetic food, as fats must supply the deficiency of the carbohydrate elements. (An emulsifying process will otherwise take place immediately on the addition of water, as great quantities of albuminous matters are present.)

It is true that a partial emulsification of the oil might relieve the pancreatic juice of some work, and this might be especially beneficial in such grave cases of diabetes mellitus in which the pancreas seems to be involved. I leave it to future investigation to determine whether the oil in peanut-flour shall be introduced in its natural state into the alimentary tract or in the form of a partial or complete emulsion.

Having undergone a thorough boiling with acidulated water, the ground kernels are subjected to dry heat, to effect complete evaporation of that fluid; but great care mu t be exercised that they do not become browned or roasted. An additional treatment with the rolling-pin will produce nearly as fine a flour as the common wheat-flour of commerce.[1]

With apparatus such as the household furnishes a flour such as the mills are capable of producing on a great scale cannot be expected to be produced. This is especially true with the hydrocarbonization (unoiling) of the flour. From 30 to 40 per cent. of the oil I deem necessary for a complete and rational diabetic food. More hydrocarbons are not required and would interfere with digestion. It is not possible to control the unoiling by the described domestic process and to determine with any degree of certainty the percentage of oil extracted; if the flour is manufactured by mills, however, this could be readily controlled and ascertained. The most simple process of extracting the oil, when manufacturing the flour on a large scale, is by pressure, either by the employment of the cold or the warm process; the pressure can be so regulated as to extract just the amount of oil that is not wanted.

I have made use of the flour in different ways, the most simple of which is in the form of a porridge, some milk being added to it. Bread and biscuits can also be baked from it, but the nicest and most easily digestible form in which to utilize it is, I think, the German pancake. Every housekeeper understands how to make the latter, and a tasty and always fresh piece of pastry can therefore be produced on short notice.

I have used this flour with four diabetic and a number of other patients of mine. In the non-diabetic cases, mostly tuberculous in character, I obtained satisfactory results, inasmuch as digestion was not to any extent taxed, and in some cases the weight of the patient did not decrease, while in one instance there was actual gain in weight noticed.

The first diabetic patient to whom I recommended the flour was also the first person whom I know to have made use of it. Right at the outset it turned out to be a complete failure, as the digestion became very much impaired, thereby aggravating the general condition of the patient, an old man. A more careful and rational preparation of the flour, however, and the employment of smaller quantities when starting with it, increased its digestibility, and to-day this patient enjoys, as far as circumstances permit, a comfortable state of health. The other three patients also thrive well on this flour, the German pancake being the usual form in which they employ it. In conjunction with eatables made of this flour I allowed those patients only such foodstuffs as are generally recognized as permissible in diabetes mellitus. I have done this, not because I am a believer in the complete exclusion of carbohydrates in diabetes, which I am not (fats and even nitrogenous substances are capable of producing glycogen), but to investigate the intrinsic value of peanut-flour as a food and its ability to reduce the glycogenic sugar of the urine. In the last point, however, my researches only began at a late date and practical results I cannot offer to-day.

After my bad experience in the very first trial I

[1] Samples of the peanut-flour were passed among the audience and different tests were applied to it, to the satisfaction of those present.

accustomed the patients gradually to the flour and started in every instance with 15 grams a day, gradually increasing the quantity to 25 grams daily in the second week, 35 grams in the third week, and so forth. I did not experience any more gastric disturbances or diarrhea by the employment of the peanut-flour than is the case when using an absolutely animal diet.

If we accept the theories advanced by modern investigators in the dietetic treatment of diabetes mellitus, that a suitable and wholesome diabetic food must be easily digestible, abundant in fatty and nitrogenous, and deficient in saccharine and starchy substances, we have to consider peanut-flour a rational and logical foodstuff.

LEXINGTON AVENUE, COR. 89TH STREET.

A REPORT OF A SERIES OF CASES OF LARYNGEAL DIPHTHERIA TREATED WITH THE ANTITOXIN, WITH AND WITHOUT INTUBATION.[1]

BY EDWIN ROSENTHAL, M.D.,
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THE various historical discoveries in bacteriology that have led to the serum-treatment of diphtheria are now well known and are the common property of the medical world. I am a firm believer in the doctrines of the new pathology, and as such have had no fear in practically applying them.

The immunity of individuals against disease is understood to depend upon the destruction by certain agents of the supposed living cause of the disease. These agents may also act by hindering the growth of the living cause; by destroying its infectious properties; by the destruction of the poisonous material produced in the infected organism; or by imparting a higher degree of resisting power against the action of this poisonous material.

In April, 1893, Behring and Kossel published the results obtained in the treatment of thirty cases of diphtheria by the injection of so-called antitoxic serum. The serum was obtained from the blood of animals rendered immune to the disease by the prolonged injection of minute but gradually increasing quantities of diphtheria-toxin: a fluid obtained by the cultivation of diphtheric bacilli in nutrient broth. The success of the treatment according to Behring and Kossel was very remarkable, and other observers, notably Ehrlich, Wasserman, Roux, and now a host of others, have confirmed these results.

Independent clinical observations on the use of antitoxin have been made by myself in those cases only of diphtheria wherein the larynx was the site of the disease, and which may have necessitated intubation or not. I have had the very kind co-operation of my friends, Dr. H. H. Freund and Dr. L. Wolff. Their cases were published in THE MEDICAL NEWS, February 9 and March 2, 1895. In the bacteriologic examinations my friend, Dr. A. Klein, has lent his valuable services, and between us we have tested the antitoxin in other varieties of diphtheria, as well as its power of immunization.

Those familiar with diphtheria, especially with the laryngeal complications, know well its course and sequelæ, and, after having tried the various methods of treatment, they now make use of the antitoxin, and marvel at its peculiar specific action and at the results attained.

I report to-day twenty-two cases of laryngeal diphtheria, some of them complicated. Of this number, fourteen were females and eight males. Two died, a mortality of 9 per cent.

For analysis I divide these cases into two groups—those intubated and those not intubated. Of those not intubated—ten in number—I have no mortality to record—all recovered. Of this group, seven were females and three were males. There were three between one and two years old, three between two and three years old, one between three and four years old, one between four and five years old, one between five and six years old, one between six and seven years old.

The average time required for the relief of stenosis in this group was three days. These cases responded more quickly to the antitoxin, though the fall in the temperature and pulse-rate was different from that cited in recorded cases—never under from thirty-six to forty-eight hours—and in other infections (pneumonia) it continued for a week or more.

Of those intubated—twelve in number—two died, a mortality of 16 per cent. Taking into consideration the average mortality of cases intubated without this method of treatment—72 per cent.—we can very well appreciate the difference.

My own statistics in a recent paper on one-hundred cases of intubation (*Medical Bulletin*, September and October, 1894) showed a mortality of 62 per cent. The average mortality in cases intubated and treated with the antitoxin shows a marvellous reduction in the death-rate. I refer to the statistics of Ehrlich, Wasserman, and H. Kossel, of Katz and Aronson, and of Roux, Martin, and Chaillon. Of thirty cases of laryngeal diphtheria treated by H. Kossel at the Charité, Berlin, nineteen recovered—twelve without operation. The mortality with tracheotomy was 61 per cent. The cases, however, were seen late, and ten of the eleven deaths were seen after five days, and were septic. I do not think Kossel practises intubation.

Of the cases intubated, five were males and seven were females. Of the males two died—one between one and two years old, and one between two and

[1] Read before the Pennsylvania State Medical Society, Chambersburg, May 23, 1895.

three years old. The ages were: four between one and two years old, four between two and three years old, one between three and four years old, one between four and five years old, one between five and six years old, one between six and seven years old.

The average time for the tube to remain in the larynx was four days. Of course, there are exceptions—one case needed the tube over twelve days. Such improvement as marked those cases not intubated was noticed in these, but to a slighter degree, and the temperature was not reduced until the third day. The pulse always remained high. When other infection (pneumonia) existed the temperature, pulse, and respiration remained extremely high for several days—even after all visual traces of the diphtheria had disappeared and the tube was withdrawn. When pneumonia came as a sequel the temperature rose to 106°, the pulse to 180, the respiration to 80. Under appropriate treatment these alarming symptoms disappeared and the patients recovered.

The after-treatment of those intubated was precisely the same as in those cases in which antitoxin had not been used. The room was kept at a suitable temperature, a large kettle with water, to which was added a considerable quantity of salt, was constantly boiling in the room, the air thereby being kept moist. The throat was kept clean with a spray of hydrogen dioxid once in three or four hours, or the child was permitted to gargle with a solution of hydrogen dioxid or of boric acid. Food was given at stated intervals, not only such food as was generally thought proper, milk, beef-broth, and the like, but anything the child craved, such as ice-cream, bread, cake, coffee, candy, oranges, or the like; nor were any bad effects noticed from this procedure, for all the cases recovered. It would appear strange that children with tubes in the larynx should find great difficulty in swallowing liquids, when bread, cakes, and the like, moistened in milk or coffee, were swallowed with the greatest ease.

In two cases, notably those of Dr. Metzler, difficulty was met with in giving a sufficient amount of nourishment. Recourse was had to rectal feeding, Dr. Metzler using a mixture of milk and egg, properly prepared, to which were added three drops of laudanum for each injection. Experience has taught me that under the antitoxin-treatment all stenosis should disappear on the third day; for that reason all the tubes were withdrawn on the fourth day—if not previously removed by coughing—and were only reinserted if required; this was only necessary in three cases when daily removals were practised.

The temperature and pulse-rate remain high in cases intubated; but when this continued after the third or fourth day—probably due to streptococcus or pneumococcus infection—the tube was withdrawn anyhow and appropriate treatment was pursued.

As to the antitoxin used, most of my work was done with Behring's antitoxin, of which I always had a constant supply—through the kindness of a relative, Geheim Sanitäts rath, Dr. A. Baer, of Berlin—though I have treated cases with the antitoxins of Aronson, Gibier, and McFarland, all cases recovering. I must acknowledge equal value to each, although that of Behring seemed to act more quickly and more decidedly, and has thus received more confidence from me.

As to the method of using, if the child was very young and weighed little, one bottle of Behring's No. 1 was injected in one dose. If any complications existed, as infection of the pharynx, tonsils, or lymphatics, a bottle of No. 2 was used in one injection. If, after twelve or twenty-four hours, improvement was noticed, no more antitoxin was used. But if the disease seemed to progress, or the symptoms became more urgent, another injection of No. 2 was given. Two injections sufficed to cure in the worst of my cases. My injections were all made in the back, to the one side or other of the spine, under the scapula. The parts were previously washed with alcohol, soaked upon sublimate cotton, and after injection the parts were sealed with iodoform-collodion.

The indications for intubation are the same as in cases without the use of the antitoxin, with this exception: the earlier the antitoxin is used, the less need is there of intubation. However, urgent necessity—by reason of the membrane becoming loosened and thus causing suffocation—may require intubation at any moment; for the first twenty-four hours, therefore, constant visits, say, once in two hours, may be required. When, however, the treatment is begun late, say on the fifth day of the disease, my rule or practice would be to intubate first, even before injection.

My conclusions drawn from the use of antitoxin are these:

The antitoxin is a specific in diphtheria. In early cases—those seen one or two days after infection—no death-rate should be recorded.

In laryngeal diphtheria the antitoxin is specially indicated. It should be used in every stage or date of the disease, no matter how late we see the case; its influence can be proved, for cases of laryngeal diphtheria perish from suffocation long before any toxic symptoms could be manifested; for that reason I would strongly urge the necessity of prompt intubation when indicated, even before the injection of the antitoxin is made.

In conclusion, I would emphatically reiterate that in early cases no death-rate should be recorded; and for that reason would say: Do not delay or hesitate because the patient's condition is

not so bad, or because he might get well anyhow, but use the antitoxin at once. The earlier its use the more certain its success.

517 PINE STREET.

GALL-STONES WITHOUT COLIC.

BY A. L. BENEDICT, A.M., M.D.,
LECTURER ON DIGESTIVE DISEASES, DENTAL DEPARTMENT, UNIVERSITY OF BUFFALO.

THE following brief paper is presented, not so much to throw light on the diagnosis of the condition considered as to call attention to an unsolved problem, with the hope that others may be able to aid in its exposition. The text-books are almost uniformly silent as to the diagnosis of biliary lithiasis in the absence of colic. True, it is usually intimated that gall-stones may exist without colic, but, if the matter of diagnosis is considered at all, it is in such vague terms that the average man gains little aid. Partly from faulty teaching, partly from the necessity of making rudimentary instruction as simple as possible, even at the sacrifice of some details, partly from carelessness in observing cases and of noting the results of autopsies in connection with life-histories, there is a prevalent idea that the occurrence of gall-stones without colic is, at least, rather unusual. Starting with the idea that such a condition is a rarity, I have gradually veered around to the belief that even a majority of cases of biliary lithiasis may be unattended by marked symptoms. It would seem that one or more attacks of biliary colic would leave such an impression on the minds of a patient and the members of his family that the history would emphasize so painful an occurrence, even after the lapse of a considerable time. Moreover, biliary colic does not usually occur till the patient is mature and surrounded by a family. I have noticed biliary calculi at a number of autopsies without being able to obtain a history of hepatic colic. Such an experience, however, can only serve to support a general impression; it cannot be safely asserted in any given case that the patient had never had colic simply because, in a few days' attendance before death, his physician had not been informed of such an attack, or because inquiry after an autopsy failed to elicit the recollection of such trouble by some member of the family.

My attention was first directly called to the occurrence of biliary calculi, without previous colic, by an autopsy performed for the late Henry F. Formad in West Philadelphia.

The patient was a middle-aged woman in good circumstances, who had died after a long term of partial invalidism. For a week or more before death she had vomited blood and passed tarry stools. The hemorrhage was found to be due to a large ovarian cyst which had opened into the colon, blood being found throughout the gastro-intestinal tract. The gall-bladder contained about two-hundred gall-stones, the largest of the size and shape of a hazel-nut. Though the patient had been under the care of several prominent physicians no history indicating colic could be obtained. The stones were of a greenish color.

The second case was that of an old man who was treated for several minor ailments occurring in the course of carcinoma of the penis, for which operative relief was refused. Death resulted from an intercurrent broncho-pneumonia, the diagnosis being verified by the autopsy. The pericardium was normal, the heart a trifle large. There was no sign of atheroma except a small calcareous deposit in one of the sinuses of Valsalva. There were firm antemortem clots leading from each ventricle into the corresponding artery. From the left ventricle there extended a white clot eighteen inches long, showing the branches of the arch of the aorta and several of the bronchial arteries. The liver was slightly indurated and was deeply grooved, corresponding to the angles of the sixth and ninth ribs. The great omentum was adherent to the anterior abdominal wall. The stomach showed a constriction about a third of the total distance from the pylorus to the left end. This constriction was no more marked than I have found by auscultatory percussion of the living stomach, but more so than is laid down by the *Anatomies* as a normal condition. The gall-bladder was enlarged and distended with bile containing some mucus. There were two good-sized facetted gall-stones of reddish color. The kidneys were both somewhat sclerotic, the capsules stripping with difficulty.

It will be noted that the first patient, who had no particular lung-involvement, had gall-stones of a dark-green color, indicating oxidized bile-pigment, while the second patient, who died of apnea—although the broncho-pneumonia would scarcely have been sufficient to kill a more vigorous person—had gall-stones of the yellowish-red color typical of deoxidized pigment.

The only symptom that could be considered significant, so far as the lithiasis was concerned, was a dull pain with some tenderness in the region of the liver, and not limited to the immediate locality of the gall-bladder.

My third case was that of a woman, aged about thirty years, who had an abortion at the second month. She had had four children at term. I saw her on the day after the abortion, and, with the history of a spontaneous miscarriage occurring so early and with the description of the embryo coming away enclosed in its membranes, I contented myself with vaginal and uterine irrigation. It was also considered that the patient was well known, that her statements were likely to be truthful and her observation accurate, on account of some experience with labors and miscarriages. A day or two later, the temperature rising, the uterine cavity was curetted and the irrigation repeated. However, a pyemic condition gradually developed, and the patient died about ten days after the abortion.

It was learned later that the abortion had been induced. A peculiar fact about the fever was that it ran in regular periods of twelve hours, suggesting a double remittent. There was also the history of malaria some years previously, before the patient moved to Buffalo. Those who believe that "malaria jumps on and rides" when any other disease is in progress would consider this case an illustration. Personally, I feel that one so inexperienced in the matter of malarial fevers as a Buffalo physician must be cannot judge between the excellent authorities who believe in this malarial influence on the course of other diseases and the equally good authorities who laugh at the idea. During the course of the fever the patient complained bitterly of a dull, nagging pain in the side, over the liver. The autopsy revealed the presence of several gall-stones.

Case IV was that of an elderly gentleman who was operated on by an acquaintance for stone in the bladder, first by litholapaxy, and later by section. At the time of the operation I made the tentative diagnosis of hepatic sclerosis, although the liver was of normal size. The patient's complexion was sallow and somewhat pallid. He had been very temperate in the use of liquors, though formerly an army officer, but he was described as a glutton in his habits of eating. Death occurred from shock several hours after the second operation. I am inclined to think that the shock was largely due to the hepatic disease. I was invited to attend the autopsy, which was held to investigate the prostate and bladder, but the pathologist was induced to continue the section so as to expose the stomach and liver. The former was slightly catarrhal, the latter of a grayish-yellow color and somewhat sclerotic. The gall-bladder contained six nearly spherical calculi, about the size of cherries, and several smaller concretions. In color they were red, with occasional dark-green spots, the latter appearing to be the original color, since they were depressed from the general contour.

In another case of biliary calculi without colic the principal symptom was vomiting, not satisfactorily explained by the condition of the stomach itself, though there was slight gastric catarrh.

The points to which I wish to direct particular attention are these:

1. While it is well known that biliary calculi exist in persons who have never suffered from colic, the diagnosis in such cases is at present usually not made till the autopsy.

2. It would appear that dull pain in the region of the liver and vomiting are symptoms of biliary lithiasis.

3. The gall-bladder is not usually palpable; it might have been felt in the first case, but not in the other four, nor in other cases not mentioned here.

4. The color of the calculi seems to indicate the oxygenation of the system, bilirubin being the unoxidized pigment, biliverdin the oxidized form. Unless there is some marked respiratory disease or circulatory enfeeblement, the color will be that of biliverdin.

It must be understood that these statements are not made dogmatically, but rather for the sake of condensing the matter into the form of propositions, to be verified or disproved later.

[NOTE.—Since the preparation of this article I have learned that the fourth point has been anticipated by Dr. Arthur Gamgee. Some of my medical acquaintances had considered it such a ridiculous assumption that I committed myself to it with considerable hesitation.]

CLINICAL MEMORANDA.

INGESTION OF ONE-HALF OUNCE OF CARBOLIC ACID; RECOVERY.

BY R. E. LEWIS, M.D.,
OF MACOMB, ILL.

ON the evening of April 7th, at 10.45 o'clock, I was called in haste to see a young lady who, as was supposed, had taken poison with suicidal intent. Upon my arrival I found a fairly well nourished girl of eighteen years in a comatose condition, with complete muscular relaxation of the entire body. The pupils were of normal diameter, but did not respond to light. A great quantity of saliva and mucus was flowing from the mouth over the shoulder and arm and on to the bed, but no characteristic odor could be detected from it. The mouth was thoroughly examined, but showed no trace of what had been taken. The respirations, numbering forty per minute, were labored, and the pulse was very intermittent, rapid, and weak; so irregular was it that repeated attempts at counting it were unsuccessful. The whole body was bathed in cold sweat, and cyanosis was well marked both in the face and extremities. The picture presented the appearance of a sudden and unavoidable termination in death. No one knew how long the girl had been in this condition, nor could I ascertain what she had taken.

Apomorphin $\frac{1}{10}$ gr. was administered hypodermically, and only partially emptied the stomach in about eight minutes, but owing to the already depressed condition I refrained from repeating it and turned my efforts to stimulation.

From this time until 2 A.M. nearly three ounces of whisky were administered hypodermically, when the pulse and respiration became somewhat better, and the cyanosis began to disappear. Nitro-glycerin $\frac{1}{100}$ gr. was also given, but without appreciable effect. The heat of the body was maintained by hot-water bottles, and consciousness was regained by 4 A.M., but articulation was impossible.

The pulse now stood at 130 per minute, but was regular and stronger. It remained here for three days, when it began falling day by day until it reached normal at the end of a week. Digitalis was administered every two hours until my return at 10 A.M. At this visit I found the girl suffering from severe pain and tightness in the chest, accompanied by a distressing cough, which failed to raise anything. Both lungs were filled with mucus,

and moist râles were audible over their entire surface. Morphin $\frac{1}{16}$ gr. every two hours was sufficient to control the cough and afford some rest.

During the next six days the patient expectorated large masses of mucus and blood, which were so very thick that they resembled masses of broken-down lung-tissue, and her temperature ranged from 100° to 101.5°. There were some vomiting and pain in the stomach, but these were easily controlled by ten-grain doses of bismuth, and she was kept on a liquid diet for a week, during which time $\frac{1}{30}$ gr. doses of strychnin three times daily were administered.

At the termination of a week her lungs had pretty well cleared up, the pulse had become normal, and she was feeling quite well, except that she had lost her voice. It is still absent at this writing.

After her recovery she informed me that she put a tablespoonful of carbolic acid into a cup of water, and drank it at nine o'clock that evening, which was one-and-three-quarters hours before I saw her. This accounted for the absence of its action upon the mouth and the few gastric symptoms present. The lungs suffered acute inflammation as a result of the drug being eliminated mainly through them, as the urine was repeatedly examined and showed no renal inflammatory process at any time. The girl was in the fourth month of pregnancy at the time the poison was taken, and no disturbance has yet shown itself in this respect.

This case I consider of interest from the fact that the acid, in a dose that ordinarily would prove fatal, was taken in its most favorable form for complete absorption, and that the length of time elapsing from its ingestion until any assistance reached her was sufficient to bring a large part of it into the circulation.

TORTICOLLIS: ITS PERSISTENCE AFTER OPERATION DUE TO ANOMALOUS NERVE-SUPPLY.

BY A. H. P. LEUF, M.D.,
OF PHILADELPHIA.

IN the *American Journal of the Medical Sciences* for January, 1895, appears an article on "The Operative Treatment of Spasmodic Torticollis, with Cases," by Drs. Richardson and Walton of the Massachusetts General Hospital. In this, on page 32, reference is made to the anomalous origin of the spinal accessory nerve from the anterior loop of the second and third cervical nerves. This was found once in a dissecting-room subject. They suggest that a similar anomaly was probably present in the case reported by Dandrige, and accounts for the failure of the procedure.[1]

The practical bearing of a knowledge of these anomalies upon practice makes a record of similar experiences desirable, and hence my contribution of the following case.

During the year 1881 I was requested to examine the body of an elderly man who had at last succumbed to the strain of a spasmodic torticollis, which persisted despite the trial of every known mode of relief, including two operations, in one of which the spinal accessory was severed upon its entrance into the sterno-cleido-mastoid, and during the other upon its emergence from this muscle. There was, however, no relief.

At the autopsy I found that the abnormal nerve-supply to the affected muscle came from the anterior branch of the first cervical as it passed down in front of the transverse process of the atlas. It was fully one-half the size of the spinal accessory, and entered the sterno-cleido-mastoid from its inner side at about the middle. One-half of the nerve supplied the muscle, while the other half passed subcutaneously forward to the skin over the larynx. This occurred on the right side.

In the dissecting-room it was noted that the entire spinal accessory in this case was derived from an abnormal source, whereas in my case the spinal accessory appeared normal in all its relations, especially to the operator, who could not suspect at the time the accessory supply from the first cervical. As to whether Dandridge found the spinal accessory or not is not stated by Drs. Richardson and Walton. Very likely there are more cases of this kind, and if so, they should be reported.

In a brief search I find no satisfactory information concerning abnormal nerve-supply to the sterno-cleido-mastoid. In view, however, of the origin of the spinal accessory from almost the entire length of the cervical portion of the cord, careful research upon the cadaver, if requisite, may reveal many anomalies similar to the one I have herein reported. In all probability the accessory slip from the first cervical in my case was a deflected root of the spinal accessory, which, instead of passing upward into the cranium with the other accessory fibers, took a direct course outward with the first spinal nerve, from the descending loop of which it followed the shortest course to its destination. What more likely, therefore, than that any of the roots of the accessory may occasionally take a similar direct route?

It seems to me that the failure of operative treatment of torticollis due to sterno-mastoid contraction should be followed by the careful raising of this muscle from its bed in the upper third of its length with a view to discovering and severing accessory nerve-supplies.

2353 NORTH SEVENTEENTH STREET.

[1] "Operative Relief for Torticollis," Trans. Amer. Surg. Assoc., 1880, p. 500.

PURPURA HÆMORRHAGICA WITH CEREBRAL HEMORRHAGE.

BY GEORGE J. NEWGARDEN, M.D.,
FIRST LIEUTENANT AND ASSISTANT SURGEON, U. S. ARMY,
FORT WAYNE, MICH.

E. G. J., aged thirty-eight years, a Swede, presented himself for treatment March 27, 1895, complaining of a persistent oozing of blood from the cavity of the second right upper molar. The tooth had been extracted on the previous day, and the hemorrhage had continued ever since. Under treatment with Monsel's solution locally and sulphuric acid and ergot constitutionally the hemorrhage ceased in a few hours. The man was kept under observation until the 31st, but there being no recurrence up to that time he was discharged. On April 13th he again applied for treatment, complaining of a peculiar weak feeling in the legs and stating that there were some spots on the skin. Examination revealed a marked case of purpura, the petechiæ being large and numerous and extending from the ankles to the middle of the thighs. Under treatment they underwent the usual changes and were rapidly disappearing, when on the afternoon of the

16th he complained of severe headache, and went into a convulsion, which was followed by a comatose condition, with stertorous breathing, unequal pupils, the right being dilated, and left hemiplegia. Consciousness returned in an hour, as well as power on the affected side. After about two hours of apparent improvement the man relapsed into his former condition and remained so until April 20th, when he died. During this time there was incontinence of urine, which was hemorrhagic in character. The rectal sphincters were in a normal condition.

For some years previous to death the man had had a mitral regurgitant murmur, with compensatory hypertrophy, and, though noticeably anemic, had been regularly performing all his duties without complaint. There was no history of previous persistent bleeding and no specific taint. The family history was good, as far as could be ascertained.

At the autopsy, made thirteen hours after death, the left ventricle was found greatly hypertrophied, with vegetations on both aortic and mitral valves, the latter being bound down by adhesions. The right ventricle was dilated. The lungs were normal. The kidneys were contracted, their capsules adherent, and small cysts were scattered through both. The liver and spleen were normal. A large hemorrhagic extravasation was found over the right cerebral hemisphere, and a clot of the size of a hen's egg in the right middle lobe from rupture of a branch of the middle cerebral artery; the hemisphere itself was badly broken down.

INVERSION OF UTERUS FOLLOWED BY DEATH.

BY EUG. A. CROUSE, M.D.,
OF GRUNDY CENTER, IOWA.

MRS. P. was confined Monday, April 1, 1895, with her first child, and there was nothing unusual in the labor, which lasted a few hours. The placenta passed away in a short time, and there was no flooding or excess in flowing at any period of her sickness.

Through the courtesy of her attending physician I was called in counsel two days later, as he stated that the uterus was inverted. Upon examination I found a relaxed and flabby uterus with complete inversion, almost filling the vagina, and the inverted fundus presenting at the vaginal outlet. The os was large and patulous. There was no pain except during manipulation of the organ. After one or two unsuccessful attempts in other ways, I made a cone of my thumb and fingers, and by steady, firm pressure with one hand, and with the other making counter-pressure above the pubis, I succeeded in perfectly replacing the uterus, retaining my hand in the cavity for a short time, which brought on some slight contracting pains.

There followed decided symptoms of "shock," as shown by pallor of the countenance, anxiety, a soft, rapid pulse, coldness of the body, and weakness.

We could not determine definitely how long the patient had been in this condition, but we think at least from the morning of April 2d.

We gave the woman tonics, stimulants, ergot, and nourishment freely, with antiseptic vaginal douches. All of our efforts, however, were unavailing, and she died on the afternoon of April 4th.

NEW DEVICE.

A COMBINED FACE-GUARD AND TONGUE-DEPRESSOR.

BY S. SEILIKOVITCH, M.D.,
OF PHILADELPHIA.

EVERY physician who has to deal with a diphtheric patient tries to prevent the expectoration of particles of membrane or sputum into his face; this he usually accomplishes by turning away his head, but, by doing so, he is still not entirely safe.

The use of a piece of glass for this purpose as a protector, as suggested by Dr. James Ely Talley (MEDICAL NEWS, January 12, 1895), is not a new idea. As adjusted by Dr. J. Madison Taylor, a second person is required to hold the glass, and this may greatly interfere with the movements of the physician or with the rays of light, and thus prove very inconvenient. If the glass be held in the physician's hand—both his hands are occupied, as with one he fixes the tongue-depressor. Dr. Talley attaches the glass to the band of an ordinary head-mirror, thus freeing one hand and facilitating the work. This is a very good plan, as the guard is always in position, because it moves with the head in the desired direction, and the hands are thus kept free.

So long as we have nothing better we do not look into the disadvantages of a certain device, and we are satisfied with the advantages. The disadvantages of a face-guard attached to the band of a head-mirror are as follows:

1. It may be impossible to use the head-mirror under certain circumstances, and when removing the glass guard and holding the mirror to the band one meets again with the inconvenience of a second person holding the glass guard; if such an assistant is not present, the operator's hands are not both free.

2. The vapor covering the glass from the patient's breath spoils the clearness of the picture of the fauces.

3. The room may be warm, and if one sweats, no matter how light the protector, one feels as if a load were about the head; one is prevented from wiping the sweat from the face or from adjusting one's spectacles, etc.

4. Sometimes one must wear the protector for a long time, or be bothered by taking it off and refixing it again.

A "combined face-guard," or a "face-protecting tongue-depressor," to be described, will in most cases prove of utility by obviating the disadvantages of the ordinary face-guard. It is, I believe, simple, convenient, and useful. It consists of six pieces: a round glass, a frame, a sliding-rod, a thumb-piece, an open clamp or spring-groove, and a tongue-depressor.

The glass is round, of moderate thickness, so that it will not break easily or make the instrument too heavy; it is five inches in diameter, thus covering the entire circumference of the patient's mouth and not allowing any expectoration to strike the physician's face. The frame is made of metal, half-moon-like round, grooved in the inside, into which the glass is imbedded, thus strengthening the glass; should the glass break a new sheet can be slipped into the frame and cannot fall out. The sliding-rod, which is attached to the lower edge of the frame, is bent so as to stand out at least half or nearly three-quarters of an inch from the spatula, thus

preventing it from striking the spatula when making lateral movements. The open clamp or spring-groove is attached to the tongue-depressor; it hugs the sliding-rod and allows it to slide and stay in any position. The thumb-piece is attached to the lower end of the sliding-rod which is in the spring-groove; it rotates the glass, and slides it up and down; it is taken apart by sliding the thumb-piece through the clamp. The tongue-depressor is made of solid metal; the handle is hollow, thus reducing the weight of the instrument.

Practically, this instrument consists of two parts: the glass, frame, sliding-rod, and thumb-piece forming one part; the tongue-depressor and spring-groove making the other part. When putting it together one merely slips the rod where the thumb-piece is into the groove,

slides it down, and the instrument is ready for use. Fixing the tongue-depressor on the patient's tongue, one keeps the thumb on the thumb-piece, and the other hand is free for atomizing, cauterizing, or for other purposes. In moving one's head up and down, or from side to side, one presses the thumb-piece with the thumb in the desired direction, thus regulating the position of the guard, while not disturbing at the same time the position of the depressor or interfering with the work to be done. There are no complicated parts and no screws; it can be easily put together or taken apart. As it can be boiled, it can be easily rendered aseptic. Messrs. Tiemann & Co., of New York, are the makers, and the instrument is constructed in the best possible way.

777 SOUTH THIRD STREET.

MEDICAL PROGRESS.

Laryngeal Hemiplegia due to a Malignant Papilloma of the Brain.—MACKENZIE (*Journal of Laryngology, Rhinology, and Otology*, vol. lx, No. 4, p. 259) has reported the case of a man, sixty years old, who presented shortness of breath, huskiness of voice, and slight occasional dysphagia. Five years previously he had suffered from transitory melancholia. Laryngoscopic examination disclosed complete respiratory and phonatory paralysis of the right vocal band, which lay in the cadaveric position, and was neither abducted nor adducted in the slightest degree during phonation or during respiration. Its tension was also defective. There was no intra-laryngeal swelling, and an esophageal bougie passed without the slightest obstruction. There was dulness on percussion above and below the right clavicle, and posteriorly, on the same side, there was well-marked bulging in the supra-spinous region, with increased vocal resonance and bronchial breathing.

A provisional diagnosis was made of pressure upon the right recurrent laryngeal nerve, most probably where it comes into relation with the apex of the right lung, by some old pleuritic affection. Free and repeated counter-irritation over this region was recommended, and potassium iodid prescribed. Slight improvement followed, but later giddiness developed, speech acquired a nasal intonation, and swallowing was followed by nasal regurgitation of fluids. The walk became staggering. The knee-jerks and plantar reflexes were normal or exaggerated. The pupils reacted to light, the left, however, more freely than the right. There was diplopia, apparently due to paresis of the right superior rectus. The fundus of each eye presented no abnormality. The patient became incoherent, restless, and talkative, and finally semicomatose until death ensued.

Upon post-mortem examination firm adhesions were found binding the apex of the right lung to the anterior chest-wall, especially opposite the second rib. The lungs and pleura presented no other abnormality. Both vocal bands were in the cadaveric position, and the ventricles contained small collections of food-particles. Both vagi and recurrent laryngeal nerves were examined, and found normal and free from local pressure. No difference could be observed between the muscles on the two sides of the larynx. The liver was the seat of a number of simple angiomatous tumors of unusually large size. On the under surface of the cerebellum were three distinct tumors, slightly raised above the surface. The largest, about the size and shape of a hazelnut, with its long axis placed transversely, occupied a part of the flocculus and the biventral lobule on the right side. The smallest lay near by, about one-quarter of an inch behind and a little further externally, while the medium-sized one lay in the postero-inferior portion of the left side near its internal margin. In addition to these there were five or six other tumors varying in size, mostly situated close to the surface of the gray matter, but two, however, were quite imbedded in the white matter. On section these tumors all resembled one another. They had a yellowish-white center, with a well-defined reddish periphery, the smaller ones being entirely reddish. They were fairly firm and well-defined, in some cases reaching the surface; in others, having a thin layer of gray matter outside of them, or being entirely in the white matter. The first-mentioned and largest of the tumors might have exercised a varying degree of pressure upon the roots of the right vagus nerve, to which it was close, but the nerve was not flattened, and the nucleus, as well as the other basal nerves, appeared normal. No tumor was

seen projecting above the surface of the cerebrum or was visible on external examination, but on section there were fifteen or sixteen tumors found scattered throughout its substance, the largest being about the size of a hazelnut. On section these exactly resembled those in the cerebellum. The surrounding brain-tissue presented the appearance of an ordinary encephalitis, mostly of a comparatively recent origin. No tumor-growths were found in any other organs or tissue in the body.

Strangulation of the Vermiform Appendix in an Infant Six Weeks Old.—DREW (*Lancet*, No. 3740, p. 1114) has reported the case of a male infant, six weeks old, that presented an inflamed, irreducible swelling, occupying the right groin and the right side of the scrotum. The latter had been enlarged from birth, but was reducible by manipulation. The swelling appearing unduly large, and the child being restless, the mother administered a dose of castor-oil, which acted freely. The child vomited, and the swelling became larger and harder, and the skin red. Hot fomentations being unattended with relief, an attempt was made to reduce the swelling under chloroform. Something was found to go back, but there was no sliding or gurgle, and the swelling was not visibly reduced in size. The child vomited once during the next day, and the bowels acted twice. The skin of the right side of the scrotum was red and edematous. The right inguinal canal and the right side of the scrotum were occupied by a hard and tender swelling, which was irreducible.

On operation the tissues were found to be thickened and inflamed. The tunica vaginalis contained a little fluid, and both it and the testicle were inflamed. The vermiform appendix occupied the funicular portion of the sac. It was red, and its middle third was considerably enlarged. A ligature was applied on the proximal side of the swelling. A circular incision was then made around the upper part of the appendix, only the serous and muscular coats being divided. These were then retracted from the central mucous tube, and the latter was tied with a fine silk ligature at the highest point exposed. The mucous membrane was then divided below the ligature, and the appendix was removed. The serous and muscular coats, being released, projected well beyond the ligature. They were inverted by three Lembert sutures, which were tied over the end of the stump. A second series of Lembert sutures were inserted, and as they were tied the central tube of mucous membrane was displaced upward into the sacrum. The stump of the vermiform appendix was reduced into the abdomen, the neck of the hernial sac was ligated and divided, and the operation was completed in the usual manner, the wound being entirely closed after the operation. The temperature rose to 101.6°, but fell to the normal on the following day, and so continued afterward. The wound healed by first intention, and the child was discharged on the eighteenth day.

The parts removed consisted of an inch-and-a-half of the vermiform appendix. At a distance of half an inch from its tip there was an oval, fluctuating swelling, measuring half an inch in length, and containing pus, which lay altogether external to the mucous membrane. The latter was thinned by ulceration opposite the abscess.

Ulceration of the Innominate Artery from a Halfpenny.—ATKINS (*British Medical Journal*, No. 1792, p. 973) has reported the case of a child, three years old, that had swallowed a halfpenny, without coughing or choking. Feeding with porridge, etc., followed by castor-oil and free purging, was during the next three days unattended with additional symptoms. Some six weeks later the child again presented itself with ulcerative stomatitis of not severe degree, although a few ulcers on the tongue were rather deep. There was no line on the gums. The temperature rose to 101°. Potassium chlorate and borax were employed topically. There was some objection to taking solid food, which caused coughing, hawking, etc. The ulcers were nearly healed, and the child seemed doing well, when it suddenly ejected two ounces of bright blood in clots. He was seen to be much collapsed and blanched out of proportion to the visible hemorrhage. Under treatment he rallied somewhat, and was able to swallow the liquid allowed in small quantities. A little later he ejected four ounces of blood, and died in a few minutes. Upon post-mortem examination the stomach was found distended with about three-quarters of a pint of blood-clot, but it was otherwise normal. There was also much blood in the upper intestine. A catheter introduced into the esophagus from below passed into a cavity about the size of a walnut, just below the level of the right sterno-clavicular articulation, as seen after dissecting off the trachea and removing the lungs. In this cavity, which was entirely on the right side of the esophagus, was a blackened halfpenny. When the firmly contracted heart was opened, a probe, passed along the aorta and into the innominate artery, protruded into the same cavity, at about the bifurcation of the vessel. This was very fetid, but no suppuration was evident; only broken-down blood-clot.

Syncopal Bradycardia.—At a recent meeting of the Harveian Society of London, MORRISON (*Lancet*, No. 3740, p. 1119) made the following classification of bradycardia: 1. Endocardial bradycardia, in which the chief factor is increased endocardiac blood-pressure. 2. Myocardial bradycardia, due to fatty or fibroid degeneration of the myocardium, or to changes assumed to exist in the intrinsic neural mechanism of the heart. 3. Exocardial bradycardia, or that due (*a*) to reflex and transient nerve-irritation, especially in the pneumogastric territory; (*b*) to poisons, such as digitalis, opium, and chloroform; (*c*) to constitutional and extracardiac diseases, such as rheumatism, syphilis, and meningitis. 4. Compound bradycardia, or that due to various factors. 5. Doubtful cases, in which well-marked clinical bradycardia could not be ascertained after death to have rested upon a discoverable cause. It was shown that bradycardia could not be associated exclusively with most anatomic changes, either in the heart or neighboring organs, because these were much more frequently attended with cardiac acceleration. A preponderant *rôle* was ascribed to the influence of the cardiac nervous system. Special emphasis was laid on the fact that cardiac accelerants had little appreciable effect upon the heart in persistent bradycardia. These include belladonna, trinitrin, and alcohol, as well as such movements, locomotor or pyrexial, as under normal circumstances quicken the heart.

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IS THE BRAIN AN APPENDAGE OF THE ALIMENTARY CANAL?

THERE is nothing more humbling to our pride than the study of pedigrees. How many of the heroic ancestors of our Sons of the Revolution are found on investigation to have been runaway chore-boys or sutlers' assistants? Even St. George, of merrie England, himself, is said to have been martyred (by request) on account of the bad bacon he supplied on a Government contract, and our physiologic aristocracy fares no better under the pitiless researches of science. If there is any organ in the body which has had the legend characters "F. F. V." inscribed upon it in large letters by universal consent, it is the lordly brain. Is it not the seat of the intellect, the organ of thought, the home of the soul? We even speak of it with bated breath as of a denizen of another sphere, which has done our gross body too much honor by condescending to take up its abode with and be supported by it. Does not the brain make the man, as all our systems of education recognize and completely ignore the dull body accordingly?

The first blow to this canonization was given when it was discovered to be part of the body, composed of precisely the same chemic and biologic elements as the rest of the tissues, and subject to the same laws of growth and decay. Then it was proved to be absolutely dependent upon them for its nutritive existence. It was next found to be merely an organ, and not even an essentially vital one at that, as its entire mass could be removed in the lower animals and large portions of it in human beings, and yet life be maintained. In short, it is merely a sort of representative headquarters, a congress, a telephone-exchange, created by the citizen-cells of the body-republic, for expediting their commercial transactions and facilitating communication.

What class of voters appears to be most largely represented in this assembly? Apparently this honor belongs to the great boroughs of the muscle-cells. Indeed, *all* that we absolutely definitely know of the functions of the central brain-mass is that large tracts of the choicest portions of its surface appear to be solely concerned with transacting the commerce of these great inland guilds with the sea-board and with one another. The five great exploring, news-gathering, and signal-service classes have also laid out and improved large areas of the cortex as their stock-exchanges; but as for the judgment, the memory, the reason, the imagination, they seem to be merely tenants-at-large, with no more local ownership-rights than the Jews of the middle ages. To say that the brain is the organ of the muscles and the five senses is humiliating enough, but worse is to follow.

It has long been known by biologists that the earliest central aggregation of nerve-matter to be found is in the form of a ring or collar around the esophagus, in crustacea, in squids, and even in some worms. This consists of four ganglia, connected by nerve-cords, of which the lower or ventral pair are larger than the upper or dorsal pair. These ganglia are accordingly known as the sub-esophageal and the supra-esophageal. When, however, we come to the vertebrate type we find at once, even in the lowest forms (amphioxus, ascidians), that the sub-esophageal ganglia have disappeared completely, and all the neural mass is apparently above (dorsad) the esophagus, and no trace of the "collar" to be found. So radical is the change that for a long time the vertebrate nervous system was regarded as of entirely different origin from the invertebrate. To the morphologist, however, this seemed irrational, incredible, and the question was soon raised, Did the alimentary canal always terminate at

its present cephalic extremity, the vault of the pharynx?

An examination of this region in the adult human head quickly reveals a most suggestive state of affairs. In the roof of the pharynx we find that singular group of lymphoid tissue, Luschka's tonsil, surrounding a pouch-like opening extending directly upward, the so-called pharyngeal bursa. Directly above this, in the floor of the cranium, is situated a deep socket-like depression in the basisphenoid, the pituitary fossa, occupied by the "gland" of the same name, better known as the *hypophysis cerebri*. The lower half of this body is composed of glandular epithelium like that of the pharyngeal vault, while the upper half is of nervous tissue. The inference is plain, and when we further find that in childhood the infundibulum, or stalk of the pituitary body, is hollow, and thus connects it directly with the cavity of the third ventricle, while a fibrous cord runs from the lower surface through the body of the sphenoid to the pharyngeal bursa, and that in embryonic life the open pouch upward from the pharynx is in direct contact with the open pouch downward from the neural canal, we are almost driven to the conclusion that we have here the remains of an ancient connection between the neural and enteric canals.

This is far from being as preposterous as it seems, for it has actually been demonstrated to exist at the opposite or caudal extremities of the tubes in many vertebrate and even human embryos, the points of former juncture at this end being Luschka's coccygeal body on one side and the appendix vermiformis on the other, which latter disused passage has been vindicating its former importance and present possibilities for mischief in a most sinister manner of late. In this light appendicitis is merely another striking illustration of the peculiar liability of atrophying rudiments, especially of former openings, to become the seat of disease.

In fact, the later view of the origin of the pituitary body, originally suggested by the great Owen, and recently verified by Gaskell and Sutton, is that it is the remains of the primitive esophagus, of which the third ventricle is also a part, and which extended upward *via* the pineal gland and its (hollow) peduncles to a mouth situated somewhere in the cranial vault. The present mouth and fauces are a secondary invagination of the buccal derma (as they obviously are histologically and embryologically) between those two pairs of primitive "legs," or gill-arches, the upper and lower jaws. But, says some one at once, what about the pineal eye? Two answers might be given, both conclusive. The first is that the "eye"-theory of the pineal gland is purely conjectural, as it is nowhere found in a functional state, and careful examinations of the structure in its most highly developed form in certain lizards (*Hatteria*, etc.) reveal merely a cup-shaped sac filled with epithelial *débris* and pigment, connected with the third ventricle by a hollow stalk. It is really doubtful whether it ever was an eye at all. Any epithelium-lined cavity might have degenerated into similar *débris*. The second answer is that, supposing the organ to have developed visual functions at some time, this might easily have been a *secondary* modification of a disused alimentary opening. Of course, any view of the genesis of this pineo-pituitary tract must, from the nature of the case, be mainly theoretic. The use of a theory is to explain facts. Let us apply this test to our present one.

In the first place, the theory offered restores the unity of plan between the vertebrate and the invertebrate brain, the cerebral masses being grouped *around* the alimentary canal in both. The cerebral hemispheres are one pair of esophageal ganglia, the corpora quadrigemina the other, and the crura cerebi the linking "collar." Thus the most "intellectual" part of our brain is the most "abdominal." This is hard on the cerebrum, but it has had so much flattery that it must take its turn with the rest of us.

Secondly, this theory ranks the whole of the face and sense-organs as ventral appendages, developing into gill-arches, and finally fusing together more or less completely. For instance, we might regard the supra-orbital ridges and nasal bones as one pair; the eyes with their muscles (endopodite) and orbito-malar arches (exopodite) as another pair of appendages (as to this day they are in the cray-fish); the superior maxillæ another pair; and the lower jaw (mandible) a fourth, the teeth having originally been at the symphysis and the jaws opening laterally, as they do in the "foot-jaws" of the lobster. The nasal, otic, and oral cavities are thus gill-clefts, and the origin of congenital cysts at the angles of the orbits and in a line with the angles of the mouth, as well as opposite the ends of the lower gill-clefts in the neck, is beautifully explained.

The arterial circle of Willis around the pituitary fossa may, perhaps, be regarded as the remains of a primitive vascular ring with one dorsal (basilar)

and two ventral (carotid) aortas, as in invertebrates, while the same may be said of the singular "circular sinus," with its (now disconnected) single dorsal (longitudinal) and double ventral (cavernous) sinuses.

Furthermore, the presence of calcareous and siliceous matter ("brain-sand"), which is utterly unintelligible on the supposition that the pineal body was originally an eye, explains itself at once if the organ was a mouth-part with horny or enamel-like epithelial formations.

But the most interesting and practical aspect of this theory is the light it casts upon the nature of that mysterious organ, the pituitary body. This has been attracting a good deal of attention of late, after the familiar manner of most vestigia, by being concerned in a serious disturbance of general nutrition, akromegaly. The most constant pathologic change in this interesting condition is a marked hypertrophy of this body, followed later, in some cases, by atrophy. A similar enlargement has also been reported by recent observers (Tartufi, Dana, Hutchinson) in cases of giantism, and a number of cases have been recorded in which the subjects of akromegaly were decidedly above the average height and weight. Hence it has been suggested that a considerable proportion of cases of giantism are simply akromegaly occurring in early life, when the abnormal growth could take place comparatively symmetrically. This supposition is strengthened by the well-known fact that giants are usually weak, overgrown, slow-witted, short-lived individuals—abnormal, in fact.

The theory is further supported by the fact that in giants far the larger part of the overgrowth takes place in the extremities (arms and limbs), to the terminal segments of which it is mainly confined in akromegaly, while the same is true in dwarfs, most of the shortening being found in the bones of the limbs. Is it not most suggestive that the organ whose hypertrophy almost invariably accompanies these changes is at the very juncture of the neural and enteric canals? Half-brain, half-stomach, and thus capable of sympathetically controlling the entire organism, and that the changes which result occur almost entirely in the alimentary (ventral) appendages, the frontal sinuses, nose, jaws, arms, limbs?

It is hardly necessary to suggest to clinicians in this light the remarkably intimate sympathy that still exists between the alimentary tract and the brain. It has given its name to one of our commonest forms of mental derangement, melancholia, "black bile." The delusional insanity dependent upon an impacted colon, the nightmare that avenges the overloaded stomach, the peevish pessimism and doctrinal bigotry of the dyspeptic, the torturing hallucinations of starvation, and the "mirage" of thirst are familiar to us all.

Even our theologic brethren have long known how to produce visions, ecstasies, and "revelations" by the simple means of prolonged and frequent fastings.

However little it may flatter our pride of intellect, the most terse and comprehensive definition of man is "a stomach and its appendages," and the brain must take its place with the rest.

MYDRIASIS AS A DIAGNOSTIC AND THERAPEUTIC MEASURE IN GENERAL DISEASE.

THERE still remain here and there a few recalcitrant minds impervious to logic and evidence, who hold that ocular malfunction is never a source of extra-ocular disease. For such impenetrables, of course, no one writes, and they may therefore be warned that the present writing does not concern them. There are, however, other physicians who are in doubt about the matter, or who have never had it brought home to them, and who are willing to test it when occasion presents. There is still a third class, composed of those who believe more or less, but who are undecided exactly as to what extent the fact obtains, or just what extraocular affections are the result of ocular abnormalism. To these two latter classes we have two suggestions to make.

The first is to use mydriasis as a means of differential diagnosis in certain classes of cases of functional nervous disease that are obstinate to treatment or in which the etiology of an affection that may be due to a reflex neurosis is obscure. There is an overwhelming mass of evidence to be found in medical literature leading to the conclusion that ametropia and muscular-imbalance may be the unsuspected cause of headache, sick-headache, functional gastric and digestive derangement, anemia, anorexia, chorea, convulsive tic, hysteria, and other nervous disorders. The general physician is sometimes puzzled to know how he may in a certain case prove or disprove the theory of a possible ocular reflex. If he is able to induce the patient to visit the ophthalmic specialist, he may be left still deeper in doubt by the fact that, however grand

the reputation of the specialist, his patient may fall into the hands of a faddist, or of one who refracts by machinery, or of one who disbelieves in ocular reflexes—in a word, of one who has neither the desire nor the ability to do his work with that degree of refinement, judgment, and precision upon which all success in this department depends. It might as well be confessed that the stock expression, "The patient obtained no relief from ocular treatment," has absolutely no meaning, without the clearest discrimination as to what kind of an oculist the patient consulted.

In all such cases the perplexed general physician has in mydriasis a means of differential diagnosis of often-decisive and of almost-always significant service. Homatropin (ten grains to the ounce) instilled three times a day, or atropin, if more prolonged mydriasis is not objectionable (four grains to the ounce) in ordinary cases of those under fifty years of age, may be recommended for the purpose. It is the most common observation of patients, spontaneously offered the oculist, that during mydriasis their headaches, for example, disappeared and that they felt, generally, "so much better."

If, therefore, the general physician, by following the suggestion, finds that there is relief of distant symptoms resulting from a few days' mydriasis, it is a pretty convincing indication that at least the immediately inciting cause lies in eye-strain. In such cases, if the visit to the oculist brings no lasting relief, one may legitimately suspect that gentleman's treatment is at fault, and in the fact itself one may find a valuable "check" upon or proof of his ability.

But apart from the value of mydriasis as a means of arriving at a differential diagnosis, there are many conditions in which it may be of use to the neurologist and the general physician as a therapeutic and prophylactic agent *per se*.

1. In prolonged illness, patients from their confinement and inactivity are prone to read or sew too much, and the nervous system is unconsciously irritated or wearied, either from an uncorrected ametropia, etc., or from simple over-use of the eyes and the attention, or from the wearisome use of the eyes while lying or in reclining positions. In these ways it cannot be doubted that convalescence has frequently been lengthened and the weakened organism put to harmful effort. Slight mydriasis would effectively prevent all this, and without any possible injury in other directions.

2. Proceeding upon the assumption that eye-strain may sometimes cause extraocular malfunction, and also assuming that such eye-strain may possibly exist in uncorrected or incorrectly corrected eyes, the general physician may find it of advantage to use mydriasis as an *ad interim* measure of possible relief, the accurate ophthalmologic examination to be secured later. Errors of refraction and muscle-strengths change with almost all decided changes in the general health, and it is often necessary or better to defer local eye-treatment with spectacles, etc., until health has been fairly well established.

3. Mydriasis may also be therapeutically helpful as an adjunct to other treatment. Eye-strain, of course, may be a secondary cause of distant symptoms, or one of several other causes of them. In many cases setting the accommodation at rest may prove one useful aid to other and more important general measures, either as a little means of lessening general cerebral irritation, or specifically in reducing the amount of the derouted reflex to a single organ. A most acute and scientific observer, DR. CHARLES G. STOCKTON, as a result of long experience, has concluded that severe eye-strain (and usually of a definite variety—unsymmetric astigmatism) is a frequent cause of a distinct and distressing gastric malady. (THE MEDICAL NEWS, Dec. 15, 1894, p. 655.) Now it is the veriest *a b c* of medical wisdom that a long-continued disease, even if only "functional," is not by any means always cured immediately, and as if by magic, with the stopping of the immediately inciting cause. Moreover, it is not an easy matter to secure an absolutely accurate correction of unsymmetric astigmatism in these forlorn days of tenotomomania and machinery. Besides all this, it is often doubtful if re-refraction is not required, whilst still another disturbing thought arises that even with perfect glasses hypersensitive and long-weakened eyes may still for a time remain sources of reflexes to similarly weakened organs elsewhere. Under all these puzzling circumstances is it not a promising way of escape to keep the eyes under somewhat prolonged mydriasis as an adjuvant to other treatment?

4. In cases of headache, sick-headache, and in all functional and nervous affections, wherein there is a more or less definite periodicity of recurrence, mydriasis may be of service in aborting an on-coming attack. It is readily seen that the instillations of the mydriatic should in such cases begin sufficiently early to lessen long enough the derouted

reflex, and thus to give the surcharged centers time to normalize themselves.

To the alert-minded physician the foregoing hints may stimulate other applications of the principle according to the ever-varying circumstances and conditions of his patients; but sufficient has been stated to make it appear possible that in mydriasis we have a hitherto unsuspected agent, possibly useful both in the diagnosis and in the treatment of many types of functional disease.

EDITORIAL COMMENTS.

Cents and Sentimentalism.—Hospital-reports with their prominent lists of medical officers, acknowledgments of gifts, etc., frequently furnish absorbingly interesting and amusing reading. We quote below a few passages from one illustrated, illustrative, and illustrious example that has lately come to our notice. Instead of a "Report" of what had been done, it is plain that the eye of the writer had in view a condition of affairs not yet existing, but most mightily desired. Charitable institutions have been known to use the money donated for charitable purposes to pay attorneys and lobbies for "junketing" expenses and to get further bequests and gifts. The ethics of such a plan is very questionable—to put it mildly. One wonders to what extremes such practices might finally lead, and if all the gifts might not possibly be used in this manner. And so one cannot help asking as to the ethics of using the gifts of the charitable in making gushing, lachrymose, and perfervid appeals in much-illustrated[1] "reports," the object being to elicit tears and dollars from the susceptible. If such ethics is not questionable, we incline to think the esthetics is very much so—in fact that it is nauseatingly bad. For example:

"More than *thirty-thousand* different patients have been treated in the department for the Diseases of the Ear since the hospital was opened; and thrice thirty thousand blessings have been asked upon those who made it possible to give relief to such as ask, but have no money to pay for relief."

"Give according to your means and learn the luxury of doing good. Estimate, if you can, the number of lives saved, the amount of suffering relieved, the years of happiness and usefulness secured by the work which has been done by this hospital. Compute in dollars the value of time and labor given to the world by patients restored to health, and compare it with the cost of this institution. Will regrets grow out of gifts to such a charity? Legacies left to the Manhattan Eye and Ear Hospital are investments that shall forever yield large returns of health to the sick, sight to the blind, hearing to the deaf, and blessings to the memory of generous benefactors. The channel of communication between the generous giver and the grateful receiver is direct—through organized charities like the Manhattan Eye and Ear Hospital."

> "Let thine alms go before, and keep Heaven's gate
> Open for thee, or both may come too late."

"Our hearts are touched to see the tender care these woful babes receive from gentle hands and sympathetic souls of nurse and doctor."

"How vigorously the great heart full of charity leaps to the rescue of mute helplessness. How powerful the appeal of silent suffering—*that can be relieved.* Sympathy is the strong bond that binds together God's universe; it is the sweet influence that cements kindred souls, it is the soul of charity."

> "And charity shall never fail,
> Her anchor holds within the vail."

My dearly beloved breddren, de cause ob religion am de cause ob dis church, and de success ob dis church depends upon de passon's salary. De elders will now pass de contribution-boxes.

"Athletics," and Honor and Learning.—That foot-ball is the indispensable condition of a high sense of honor and of a high standard of learning we have long been told and dare not hence forward doubt. In proof of this remarkable development of honor Yale has demanded of Harvard an acknowledgment of repentance for some rumor of hasty language, which, of course, Harvard's equally sensitive self-respect will not permit her to make. Hence the usual foot-ball matches during the next season between the punctilious youths of these two colleges will not probably take place—and the world sighs in vain to think of the degradation of character, the sad clouding of the sense of honor, and the lowered ambition of scholarship that will certainly follow from even a single year's omission of the honor-inspiring game. It may also be noted that of forty-five men elected to the senior-year secret societies of Yale only fifteen men were chosen solely on account of their records as athletes. The harsh criticism aroused by this indication of very moderate opinion seems to us strange. The absolute prerequisite of scholarship, honor, and success in life, we have been authoritatively told by our collegiate teachers, professors, and presidents, being foot-ball ability and foot-ball success, we do not understand why a less number of athletes, say 44 out of 45, should have been chosen for secret-society honors. This would leave a place, a generous allowance, surely, for one man of exceptional but purely literary ability, and for this place the young Yalesian, Chauncey A. Wells, might be selected because of the high literary ability he has displayed. We are puzzled to learn, however, that while fifteen athletes have been chosen as honormen by their fellows, young Wells has been refused the honor. *Magna est foot-ball et prævalebit.*

The Physicians and the Treatment of the Late Mr. Gresham.—It appears that the late Secretary of State of the United States was, during a part of his recent fatal illness, under the care of an irregular practitioner, who, when subsequently replaced by a regular physician, made complaint of a "stealing" of his patient. Further, we hear that the distinguished patient did not receive proper treatment, etc., etc. With the choice of a physician by a family outsiders can take no issue, but any criticism of the line of treatment pursued in a given case is quite gratuitous,

[1] The illustrations in this instance are not exactly ultra-scientific in character, as witness the legends beneath them: "A few of the hundreds in waiting for help;" "The young and the old appeal to us for help;" "The children must be saved from blindness;" "The purulent ward" (we regret in these antiseptic days that one ward is itself actually purulent); "What must be done for the little ones?" "You will regain your hearing," etc., etc.

not to say impertinent. Human judgment may err, but such error is less likely on the part of those in attendance than on the part of those who render opinions on insufficient and perhaps distorted evidence. The results of the late war did not depend upon those who did their fighting at long range—at home—but upon those who went to the front and rendered actual service.

The Meetings of the Association of American Physicians at Washington.—For a number of years the annual meeting of the Association of American Physicians has fallen on Memorial Day—a legal holiday. There would be no objection to this if the meetings were not held in the Library of the Army Medical Museum, and this necessitated the attendance—and for an increased number of hours beyond the usual—of a number of *attachés* who would otherwise be disengaged, as those in other departments of the public service are. This year, by some misunderstanding, the Library was kept open also on May 29th in readiness for the assemblage of the Association, while all other departments were closed on account of the funeral of the late Secretary of State, Mr. Gresham. Thus the Library *attachés* have this year lost two holidays to which they were entitled. We recite these facts with the assurance that if they reach the attention of the proper authorities future meetings will be so arranged that the deprivation referred to will not be repeated.

SOCIETY PROCEEDINGS.

ASSOCIATION OF AMERICAN PHYSICIANS.

Tenth Annual Meeting, Held in the Army Medical Museum and Library, Washington, D. C., May 30 and 31, 1895.

FIRST DAY—MAY 30TH.

DR. WILLIAM OSLER, of Baltimore, delivered the

PRESIDENT'S ADDRESS.

He asked, how far has the Association fulfilled the object it had in view; in how far have its original hopes and aspirations been realized? The primary object of the society has been the advancement of scientific and practical medicine, to the exclusion of medical politics and medical ethics; with no care as to who are the officers and who are not, and no question as to what part of the country a man comes from, but whether he has done good work, and will do more, and whether he has anything to say worth hearing, and can say it. The nine volumes of the *Transactions* are a full and satisfactory answer to the first question. They contain the most noteworthy contributions to scientific and practical medicine that have been made in this country during the past ten years. In them have been discussed the problems of the day. In some notable instances the subjects have been introduced through them. Especial reference was made to the papers of Fitz, on Appendicitis, and Draper, on Pancreatic Hemorrhage. Typhoid fever has rarely been missed from the deliberations, which have done much to advance sound views on etiology and treatment. The parasite of malaria has been fully discussed. The many important questions relating to tuberculosis have received a large share of attention. Studies on the diagnosis of diseases of the stomach and of the pancreas, on dysentery, on infarction, and other affections of the bowels, have greatly enlarged our conception of these disorders. Of practical interest is the large group of papers on subjects relating to heart-diseases, to arterial sclerosis, to the mutual relations of renal, arterial, and cardiac changes. The problems of anemia and chlorosis have often been before the Associatio n, almost always with profit, notably so in the case of the paper on Thrombosis in Chlorosis, which remains to-day the best on the subject which has appeared in any language. Myxedema, with the brilliant results that follow the use of thyroid extract, has been presented with unusual fulness. Among other subjects that have been judiciously and thoroughly discussed may be mentioned the results of the removal of the ovaries and tubes, subphrenic abscess, akromegaly, and lead-poisoning. Medical politics and medical ethics have received no attention, and, with the exception of the Secretary, little care has been given to the selection of officers. In the selection of members, however, the question has been asked concerning applicants, Have they done good work? Rarely anything else; never, whence they came.

The Association has already had a potent influence for good on the study of pathology and clinical medicine in this country. What is needed is a larger group of men to devote themselves exclusively to these branches. The rapid progress of the medical schools has increased the teaching positions in the scientific branches, and there is at present an actual scarcity of thoroughly trained pathologists and bacteriologists to fill them. There is no need to insist on the necessity of accurate and prolonged teaching in the development of workers in these branches; but the profession in this country seems not as yet to understand the art of training special clinical physicians. It has been too much taken for granted that these develop readily in the routine of family practice. True, along this path some of the most noted medical men have travelled, but the time has come when able young men should be encouraged to de vote themselves to internal medicine as a specialty—conte nt to labor and to wait during the first ten or fifteen years of professional life, with pathology as the solid basis of development. Such men will pass to the wards through the laboratories, thoroughly equipped to study the many problems of clinical medicine. They will gain the confidence of their professional brethren by accurate and thorough work, and through them, if they wish, the public and practice. The opportunity for such a career is in every city with a hospital of fifty beds. Of such, of physicians in contradistinction to surgeons, gynecologists, and general practitioners, and of pathologists and bacteriologists, should the Association of American Physicians in large part be composed. In connection with the proposition to increase the membership of the Association to 125, it is to be remembered that the society is a working body, and when a member ceases to attend regularly, or when his interest grows lukewarm, he will best promote the common welfare by quietly retiring. During the period of its existence the Association has lost by death 16 of a total of 111 members. In the past year two members have died, Dr. Alfred Lee Loomis and Dr. William Cecil Dabney.

An amendment to the Constitution proposing an increase in the membership to 125 was defeated.

DR. B. K. RACHFORD, of Cincinnati, read a paper entitled

LEUKOMAIN-POISONING,

which he defined as a form of auto-intoxication, dependent upon defective metabolism and appearing in three principal varieties: migraine, migrainous epilepsy, and migrainous gastric neurosis. Of the poisons of the uric-acid group the most potent is paraxanthin. Of less toxicity is xanthin. Both of these are capable of inducing profound nervous symptoms. They are soluble in urine, water, and blood. Paraxanthin is isolable from the urine only with great difficulty and when present in large quantity. For practical purposes it has been found that if detectable in less than four liters of urine the quantity may be considered abnormal. Both paraxanthin and xanthin are not formed in the kidneys, but exist preformed in the blood.

Migraine is perhaps the most common form of leukomain-poisoning. In this condition the urine will be found to be of dark-red color, free from albumin, with diminution in the amount of urea and increase in that of uric acid. During the paroxysm paraxanthin and xanthin will also be found, while these are absent in the intervals.

Migrainous epilepsy is also a manifestation of leukomain-poisoning, differing, however, from true epilepsy in the absence of mental impairment. Injected into lower animals paraxanthin and xanthin give rise to general nervousness, extreme reflex excitability, tetanic stiffness, followed by relaxation, dypsnea, gasping respiration, and stimulation of the heart. Having observed that these symptoms could be counteracted by the administration of potassium permanganate, it was concluded to employ this drug in a case of migrainous epilepsy, and one grain was given three times a day. The patient was free from attacks for ninety-four days, when an attack occurred, and this was followed by a second attack two weeks later; thereafter there was none for three months.

Migrainous gastric neuroses may develop at any period between childhood and adult life. The attack may be preceded for a day by general discomfort, scanty, high-colored urine, and flushing of the cheek. The attack breaks out with great fury, and is attended with pain in the epigastrium, vomiting of glairy mucus, eructation, occurring in paroxysms until relieved by injections of morphin. The attack is not self-limited, but persists until relieved by medicinal or other measures. Here too, during the paroxysms, the urine contains paraxanthin and xanthin in appreciable quantities, while the uric acid is increased and the urea is diminished. In one of the cases of this kind xanthin was found also in the gastric contents.

DR. F. P. KINNICUTT, of New York, asked if similar examinations had been made in cases of tetany, some of which are certainly due to auto-intoxication. One often observes dilatation of the stomach, together with severe gastro-intestinal disturbance. Of two cases seen by Dr. Kinnicutt, one was fatal within twenty-four hours of the onset of the attack, and on post-mortem examination only dilatation of the stomach was found. There had been several previous attacks, and the symptoms were typical and associated with evidences of profound gastro-intestinal disturbance. The second case occurred in a child and the spasm was continuous. In this also gastro-intestinal symptoms were prominent and relief was afforded by lavage, together with other appropriate treatment.

DR. W. H. THOMPSON, of New York, dwelt upon the intermittent character of the functional neuroses in general, contending that any nervous disease may be attended with complete intermissions. This occurrence points to a toxic rather than to a structural origin, against which the fact of hereditary transmission does not militate, for, as in gout, there may be such transmission of an abnormal chemistry as well as of an abnormal morphology. The treatment of migraine may satisfactorily be prophylactic. Ammonium or sodium benzoate may be freely used to this end. The treatment of epilepsy may be based on similar principles. In the cases of this group a cumulative tendency is to be observed and the treatment should be governed accordingly. A case illustrating the hereditary association was related. A mother suffered with migraine, her son with uric-acid gravel, a daughter also with migraine, and her son with epilepsy.

DR. RACHFORD added, in conclusion, that he had already requested permission of the Cincinnati Academy of Medicine to examine the urine in cases of tetany, but had not been afforded the opportunity.

A paper by DRS. VICTOR C. VAUGHAN and GEORGE D. PERKINS, of Ann Arbor, entitled

SOME TOXICOGENIC GERMS FOUND IN POISONOUS FOODS,

was read by title.

DR. A. C. ABBOTT, of Philadelphia, read a paper entitled

THE EFFECTS OF THE GASEOUS PRODUCTS OF DECOMPOSITION UPON THE HEALTH, AND RESISTANCE TO INFECTION OF CERTAIN ANIMALS THAT ARE FORCED TO RESPIRE THEM,

in which were detailed a series of experiments in the course of which animals, rats, and guinea-pigs, were confined under bell-glasses through which was passed continuously, for varying periods, the air from over substances (meat-infusion, sewerage, and urine) in different stages of decay. Some of the animals were subjected to this treatment only, while others were inoculated from time to time during the experiment with cultures of the bacillus of typhoid fever. Of eighteen animals on which the experiments were performed, only two showed any effect; the remaining sixteen presenting nothing that could be attributed to the conditions under which they had lived for from one to five months prior to being killed. The general condition of these animals during these experiments, as determined by their outward appearance, appetite, and daily fluctuations in weight, was as good as that of other animals kept under the ordinary conditions of the laboratory.

In the light of these experiments it is concluded that there is but one of two positions to take with regard to the effect of the volatile products of decomposition upon the health and resistance to infection of individuals who respire them: either they play no part in producing diseased conditions, or in inducing susceptibility to infection, or the indications obtained by any such laboratory-methods of experimentation as have here been employed are unreliable and not susceptible of general

application. The former alternative is to be accepted as far as man is concerned. The conditions under which he may find himself never reach such extremes as those employed in the experiments detailed, and it would seem hardly possible for man to exist under such circumstances. But that he does at times live and perform healthy functions under environments that to most persons would prove highly offensive is an every-day observation among workers in soap-factories, glue-factories, poudret-establishments, and the like, where the air breathed constantly reeks with the gaseous emanations from putrefying substances. In so far as the sewer-gas question is concerned, it is therefore difficult to conceive that the gaseous emanations from sewers and cesspools can play a part in the induction of disease when so highly diluted as they are in the air ordinarily respired by individuals into whose habitations such gases may be leaking.

DR. G. BAUMGARTEN, of St. Louis, read a paper entitled

RENAL AFFECTIONS FOLLOWING INFLUENZA.

He reported nine cases showing that renal lesions are not infrequent, though serious, sequelæ of influenza. Besides transient albuminuria he has observed acute degeneration of the kidney, acute inflammation, both forms of chronic diffuse nephritis, acute hemorrhagic nephritis, and persistent albuminuria not belonging to any of these groups. The number of applicants rejected for life-insurance has perceptibly increased since the advent of influenza in epidemic prevalence. It is thus clear that the injurious influence of the disease extends far beyond the attack.

DR. A. JACOBI, of New York, agreed to the frequency of renal congestion and inflammation in the course of influenza, and has found the diagnosis greatly facilitated by the use of the centrifuge. These conditions appear at the same time as those that occur in the course of diphtheria and typhoid fever, and are in each instance probably due to the toxins of the respective diseases. Microscopically the urine under these circumstances contains a small amount of blood, with hyaline casts strewn with granular matter and epithelial cells, and also granular casts of the thin variety. In the nephritis of scarlatina, on the contrary, the casts are of the wider variety. In the majority of cases recovery ensues in from two or three weeks to two or three months. Some, however, pursue a chronic course.

DR. JAMES TYSON, of Philadelphia, referred to a considerable number of cases in which the patients have been free from renal abnormality until after an attack of influenza. In other cases a harmless, functional, normal albuminuria was present previous to an attack of influenza, but subsequently more serious conditions suggestive of a toxic nephritis.

DR. F. C. SHATTUCK, of Boston, cited the case of a young lady who had been neurasthenic and was attacked with influenza, complicated by broncho-pneumonia and acute nephritis, resulting in almost complete suppression of urine and the development of uremic symptoms. The urine contained much albumin, and a fatal issue was feared. Later the quantity of urine increased and the patient appeared to be doing well, when symptoms of general neuritis developed and sudden death ensued. In other cases terminating fatally the large, smooth red kidney has been found.

DR. M. H. FUSSELL, of Philadelphia, cited two cases of parenchymatous nephritis developing in the course of influenza.

DR. A. H. SMITH, of New York, noted that the degree of intoxication from influenza appeared greater than the ordinary clinical symptoms would lead one to suppose. He also referred to subnormal temperature in cases of influenza, and ascribed this peculiarity to a profound invasion of the nervous system by a malignant poison.

DR. BAUMGARTEN, in conclusion, dwelt upon the varieties of renal change observed in the sequence of influenza. Some of these occur during the attack, some subsequently; some are attended with dropsy, some with uremic symptoms; some are chronic, without a distinguishable acute stage.

For himself and DR. WALKER REED, U. S. A., Surgeon-General GEORGE M. STERNBERG, U. S. A., referred to some experimental work begun by himself to determine if the serum of a vaccinated calf, immune to variola, were capable of neutralizing the potency of vaccine-virus, but attended with negative results. The investigation was taken up and continued by Dr. Reed, who succeeded in rendering monkeys resistant to vaccination by using serum from an immune calf in the proportion of 1 part to 100 of body-weight. This immunity was found to last for at least thirty days, and may be assumed to continue as long as sufficient antitoxin remains in the blood. This mode of conferring protection upon human beings can only become available by increasing the concentration of the antitoxin either by means of a virus of progressively increasing energy or by precipitation.

A paper by DRS. WILLIAM PEPPER and ALFRED STENGEL, of Philadelphia, entitled

A CONTRIBUTION TO THE STUDY OF THORACIC TUMORS,

was read by title.

DR. JAMES T. WHITAKER, of Cincinnati, read a paper entitled

ETIOLOGY OF IDIOPATHIC HYPERTROPHY OF THE HEART.

While it was contended that the conception of a true idiopathic hypertrophy of the heart is false, it was admitted that the designation was so firmly established in medical nomenclature as not to be easily gotten rid of. When the ordinary well-recognized causative influences are not present it is probable that there exists some kind of peripheral resistance. Among the causes of cardiac hypertrophy we have valvular disease of the heart; arterio-sclerosis; affections of the heart-muscle from infection, degeneration, etc.; affections of the nervous system. Such hypertrophy also develops in old age, as a result of hard work; from plethora, in the course of pregnancy; and from the abuse of alcohol. It occurs further in conjunction with nephritis, diseases and deformities of the chest, emphysema, kyphosis; with myocarditis, syphilis, gout, and diabetes; from irritation of the vagus, abuse of tobacco, venereal excess, etc.

DR. J. P. C. GRIFFITH, of Philadelphia, read a paper on

THE PROPAGATION OF MITRAL DIASTOLIC MURMURS.

He explained that he included in the diastolic period all murmurs occurring from the closure of the semi-

lunar valves to the occurrence of the systolic impulse. These, though usually confined to the apex, are not invariably, and are sometimes propagated quite extensively, as, for instance, upward to the left, into the axilla and to the back. Seven cases were related, in which a mitral diastolic murmur was widely transmitted: in one, two-and-one-half inches behind the posterior axillary line; four to the posterior axillary line; and two to mid-axilla. All were heard high up in the axilla.

DR. JAMES TYSON, of Philadelphia, said that he had had the opportunity of making an auscultatory examination in one of Dr. Griffith's cases, in which the murmur was audible high up in the axilla and in the back. He presented a specimen illustrating the enormus dilatation which the left auricle is capable of undergoing in association with mitral stenosis. It came from a woman of twenty-eight, who had presented symptoms of pulmonary obstruction, with frothy bloody expectoration, but a diagnosis of mitral insufficiency only had been made.

DR. J. T. WHITAKER, of Cincinnati, said that not the extent, but the site of maximum intensity of a cardiac murmur was the point of importance in auscultatory diagnosis.

DR. CHARLES CARY, of Buffalo, stated that the production of a presystolic murmur and its character depended rather upon the vigor of the auricular contraction than upon the valvular condition merely. When the auricle is hypertrophied and the stenosis is marked the transmission is less than when the heart is enlarged and comes in contact with the chest-wall in diastole.

DR. J. H. MUSSER, of Philadelphia, cited the case of a middle-aged woman with a presystolic murmur heard at the angle of the scapula and duplication of the second sound heard high up in the axilla. In some cases of hypertrophy of the heart, with distressing symptoms, relief follows the occurrence of dilatation with the development of a mitral regurgitant murmur.

DR. A. MCPHEDRAN, of Montreal, agreed that the usual description of the mitral obstructive murmur is incorrect, and cited the case of a man with this condition who died from pulmonary hemorrhage after having presented for several years extreme dilatation of the right ventricle without hypertrophy. A murmur occupied the entire systole, and was heard over a large extent of the chest, being propagated into the axilla. The loudness of the murmur depends upon the tension of the blood in the pulmonary circulation, and is thus related to the compensation of the right ventricle.

DR. A. H. SMITH pointed out that some murmurs described as diastolic are perhaps partly systolic, as mitral obstruction is, as a rule, associated with incompetency. The systole begins before the cardiac impulse is felt, and ends after the impulse is lost.

DR. GRIFFITH, in concluding, added that in his cases the point of greatest intensity was in the classic region, the mitral area.

DR. A. H. SMITH, of New York, read a paper on

THE USE OF THE DIFFERENTIAL STETHOSCOPE IN THE STUDY OF CARDIAC MURMURS.

He presented an instrument so constructed that sound-waves reach the drum-membranes through different and distinct channels. This differs from the ordinary bi-manual instrument simply in having two thoracic extremities instead of one, each connected with its respective ear-piece. This arrangement enables the examiner to hear separately two sounds produced at the same time in two localities more or less distant from each other. The instrument is useful in determining the time rather than the quality of the sounds heard in the different cardiac locations. With its use even a slight dissimilarity in sounds separated by short intervals can be appreciated. Under normal conditions the difference in character between the first and second sounds of the heart is enough to distinguish them from each other, independently of the element of time. Cases, however, occur, and not infrequently, in which neither the character nor the time of the heart-sounds is available for this distinction. In such cases the quality of one or both sounds is marked by the presence of a murmur or so modified by conditions of vascular tension as to be unrecognizable, while at the same time the intervals embraced in the cardiac cycle, instead of being unequal, have the same duration. This latter condition occurs whenever the heart's action is greatly accelerated, as the increase infrequently is chiefly at the expense of the longer intervals. At the same time, with such a rapid action, it is impossible to tell which of the alternate sounds corresponds with the apex-beat or the carotid pulse. Under these conditions, if the murmur is heard at the apex, and if by shifting the stethoscope another is found at the base, it is difficult or impossible to tell whether the two occur simultaneously or successively. The differential stethoscope will here afford important aid in diagnosis if one extremity is placed over the apex and the other over the aortic area. The question as to whether or not duplication of one or both cardiac sounds is due to want of synchronism in the action of the ventricles could also be determined by the use of the differential stethoscope. The successful use of the instrument requires a fairly acute and well-trained ear, with no difference in hearing between the two, and some practice may be necessary to acquire the power of giving separate yet simultaneous attention to the impressions that each ear receives.

DR. JAMES T. WHITAKER, of Cincinnati, pointed out that there is almost always a difference between the two ears in acuity of hearing, sometimes of pronounced degree. Further, it is not the character or the duration of the murmur that furnishes important therapeutic indications so much as it is the condition of the heart-muscle as determined by the frequency and rhythm of action.

DR. CHARLES CARY, of Buffalo, read a paper on

THE CAUSE OF THE EXAGGERATION OF SOUNDS OVER THE RIGHT UPPER CHEST, BOTH IN HEALTH AND DISEASE.

He pointed out that all authorities agree that there is a disparity in the physical signs, both in health and in disease, between the superior lobes of the lungs, which has not hitherto been satisfactorily accounted for. By means of a metallic alloy of low fusion Dr. Cary has prepared casts of the bronchial tree, showing that in man the right bronchial tube, supplied to the upper lobe of the right lung, is given off near the right bronchus, some two or two-and-one-half inches higher than the corresponding tube of the left side. This is

not an anomaly, but the common arrangement. In some instances the tube arises at a somewhat higher point. In all other respects the bronchial arrangement on the two sides is quite symmetrical. This peculiarity may account for the existence of three lobes in the right lung. In the sheep and in some other animals the first bronchial tube on the right side arises from the trachea, some two-and-one-half inches above the right bronchus. To this peculiarity may be ascribed the auscultatory and tactile differences between the two sides of the chest, both in health and in disease.

DR. CHARLES G. STOCKTON, of Buffalo, read a report of

TWO CASES OF FAT-NECROSIS.

Both occurred in Swedes and within a short time of one another. Post-mortem examination in the one showed the gall-bladder to be small, its walls thickened, and containing numerous dark gall-stones. The mucous membrane of the large intestine showed in places white dots the size of pins' heads, scarcely noticeable. The subperitoneal fat, that of the mesentery, mesocolon, and omentum was abundant. In the fat of the mesentery and mesocolon were imbedded great numbers of round, hard, white masses of variable size, mostly smaller than buckshot, and white and opaque on section. In the mesocolon they were extremely abundant, often soft and becoming confluent. The same conditions prevailed in an extreme degree in the retro-peritoneal fat behind the colon, stomach, and spleen. On removal of the spleen a large cavity was seen extending downward between the left kidney, the colon, and the stomach, and containing a soft cheesy substance resembling pus, in which lay the pancreas. The epithelium of the parenchyma and ducts of the pancreas took no stain. An area of fat-necrosis was seen at the tail of the pancreas. No bacilli were found, except near the head of the pancreas, where there were numerous short, plump bacilli with rounded ends.

In the second case the gall-bladder was found dilated and constricted at middle; the cystic duct was compressed by a fibrous band. About three feet above the ileocecal valve the ileum was bound down by a recent adhesion, on detaching which appeared a cavity as large as a walnut, containing fluid resembling pus and also small, hard masses. The mucous membrane of the colon near the splenic flexure was necrotic and easily torn. The subperitoneal fat of the abdominal wall was sparingly dotted with small, hard, white nodules; similar nodules were also present in large numbers in the mesentery and were also to be seen about the cecum. On removal of the spleen a mass of necrotic tissue was found containing fluid resembling pus, and small, white masses, some hard and some soft. The necrotic portion of the colon was in contact with black necrotic tissue behind it. The fatty tissues about the pancreas were included in the same necrotic area. The outer surface of the pancreas was grayish black and dotted with the same white masses. The epithelium of the pancreatic parenchyma took the nuclear stain poorly, some areas not taking it at all. The interstitial tissue was increased; it contained numerous nuclei and small hemorrhagic spots. A constricted portion of the pancreas showed two spots of fat-necrosis. The capsule was thick and contained numerous hemorrhagic areas. Numerous bacilli, small and large, often forming strings, with square ends, were found in the capsule, extending to a slighter degree into the interstitial tissue.

The opaque white masses in both instances consisted of coarse granules, globules, and crystals, and a small amount of masses of brown pigment. Some appeared to be surrounded by connective tissue. The circumference was infiltrated by round cells. Numerous bacilli were found between the fat cells, about the spots of fat-necrosis, in the second case. These were principally large rods with square ends; there were also some smaller rods with rounded ends. Inoculations from both pancreas and necrotic fat were made, and resulted in the development of bacilli in pure culture. From the fat a bacillus was obtained having rounded ends, and growing both as short oval and long filaments, actively motile, liquefying gelatin rapidly, and flourishing on ordinary media. It appeared to be a variety of proteus. Inoculations in lower animals were followed by suppuration. From the pancreas was obtained a bacillus with rounded ends, growing both as short oval and long filamentary forms, not motile or but slightly so, not liquefying gelatin, growing in ordinary media, coagulating milk, producing gas and an acid reaction in 2 per cent. glucose, giving a faint indol-reaction, and behaving like the bacillus coli commune. Inoculation in lower animals induced local suppuration.

DR. R. H. FITZ, of Boston, referred to experiments in which fat-necrosis was induced by means of the pancreatic secretion. He pointed out that necrosis of the fat of the abdominal wall was not uncommon, but was not usually recognized. It is the subperitoneal and not the subcutaneous fat that is thus affected. All pancreatic disease is not necessarily attended with fat-necrosis. The association is most common with hemorrhagic pancreatitis with gangrene.

(To be concluded.)

AMERICAN SURGICAL ASSOCIATION.

Annual Meeting, Held at New York City, May 28, 29, and 30, 1895.

FIRST DAY—MAY 28TH.

A discussion on the operation for

THE RADICAL CURE OF HERNIA

was opened by DR. JOHN H. PACKARD, of Philadelphia, who stated that most hernias do not come down under the infundibuliform fascia, as has so often been stated, and in proof of this he gave the results of a number of dissections of elderly subjects. He said that if an inguinal hernia comes down and pushes its way into the scrotum, we should find a very large variety of what are known as infantile hernias. He expressed the opinion that the existing theories as to the course pursued by an oblique inguinal hernia are incorrect. In conclusion, he spoke briefly of his method of performing the operation, and stated that in two recent casess, one in a man fifty-four years of age, and another in a little girl thirteen years of age, the hernias had not descended since the operation, even when the patients coughed violently.

DR. CHARLES MCBURNEY, of New York, said that he considered the presence of the cord and of the transversalis fascia about the entrance of the canal of the utmost importance in the anatomy of inguinal hernia. The sac

having been removed, the object should be to prevent its reformation. Brief reference was made to the McBurney operation, which was first used at a time when something very different from that which was then in existence was needed. The recurrences after this operation had been about 30 per cent., and any operation that gave such proportion of recurrences is not to be recommended at the present day. The opinion was expressed that the operation of Dr. Halsted is the most perfect in the treatment of inguinal hernia now in existence.

DR. JOHN E. OWENS, of Chicago, said that he did not entirely agree with Dr. McBurney regarding the importance of removing the sac, but thought it better to retain it and fold it up into a plug. He referred to the length of time that a patient could be kept in bed after an operation, and mentioned the case of one of his patients that had gone home on the eighth day, but who was compelled to take to his bed immediately thereafter.

DR. HALSTED said that he would caution surgeons against making too indiscriminate excision of the veins in the operation that bore his name. He said that his operation had been performed in 180 cases, in three of which there had been recurrence, and in all of which the veins were removed if enlarged, these aggregating 75 per cent. of the cases. The reason for care in excising the veins is that in many cases loss of the testicle followed, but most people would prefer to take one chance in fifty or sixty of losing a testicle than to take one chance in four or five of having the operation done over again, when excision of the veins was deemed absolutely necessary to prevent recurrence. Opening of the sac is necessary for several reasons. As to the time patients should be kept in bed, three weeks are too long.

DR. CABOT suggested that the oblique canal should run backward instead of downward.

DR. WARREN spoke of the adhesions that he had found upon opening the abdominal cavity a week after an operation, and which had disappeared upon further examination three months later.

DR. CHARLES B. NANCREDE said that he always insisted upon his patients staying in bed at least six weeks after operation.

DR. VANDER VEER, of Albany, N. Y., said that he had been somewhat disappointed in using catgut sutures, and had found that silkworm sutures were very much better.

DR. J. WILLIAM WHITE, of Philadelphia, read a paper entitled

THE RESULTS OF TREATMENT OF HYPERTROPHY OF THE PROSTATE.

He referred to the theory that prostatic hypertrophy is the natural process of age; according to another view, it is the result of various causes, among others excessive sexual intercourse. Changes caused in the male by the change in the testicles correspond to those in the female due to change in the ovaries. It was contended that the testicles secrete spermatic fluid for a considerable time after spermatozoa cease to exist in it, and after the loss of reproductive power. The functions of the testicles are twofold, that of reproduction of the species and that of imparting masculinity to the individual. Dr. White had collected 111 cases of double castration for prostatic hypertrophy. The cases were of the worst nature, and had been treated by different surgeons. One, in fact, had been considered hopeless previous to the operation, and yet the patient was greatly benefited. Among the whole number there were twenty deaths, several of which were due to existing complicating conditions.

The following conclusions were formulated:

1. The function of the testes, like that of the ovaries, is twofold: the reproduction of the species, the development and preservation of the secondary sexual characteristics of the individual. The need for the exercise of the latter function ceases when full adult life is reached, but it is possible that the activity of the testes and ovaries in this respect does not disappear coincidently, and that hypertrophies in closely allied organs, like the prostate and the uterus, are the result of this misdirected energy. This hypothesis would increase the analogy between the fibro-myomata of the uterus and the adeno-fibromata of the prostate, which, from a clinical standpoint, is already very striking, and is further strengthened by the almost identical results of castration in the two conditions.

2. The theoretic objections that have been urged against the operation of double castration have been fully investigated by clinical experience, which shows that in a very large proportion of cases (thus far approximately 87.2 per cent.), rapid atrophy of the prostatic enlargement follows the operation, and a disappearance or great lessening in degree of long-standing cystitis (52 per cent.), more or less alteration of vesical contractility (66 per cent.), amelioration of the most troublesome symptoms (83 per cent.), and the return of local conditions not very far removed from normal (46.4 per cent.), may be expected in a considerable number of cases.

3. The deaths have been 20 in 111 cases, a percentage of 18; but of these there seemed to be 13 that may fairly be excluded in an attempt to ascertain the legitimate mortality in patients operated upon under surgically favorable conditions—*i. e.*, before the actual onset of uremia, or, better, before the kidney has become disorganized by the two factors, rarely absent in advanced cases, backward pressure and inflammation. This, then, would leave a mortality of 7.1 per cent., which would probably be decreased as advancing knowledge permits of a better selection of cases. It is important to know that even in desperate cases, which make up this series of deaths, 15 (75 per cent.) showed improvement of symptoms or shrinkage of the prostate, before they died.

4. A comparison with other operative procedures seems to justify the statements that, apart from the sentimental objections of aged persons on the one hand, and the real, entirely natural, and very strong repugnance to the operation felt by younger persons, castration offers a better prospect of permanent return of normal sexual conditions than does any other method of treatment. The relatively greater degree of improvement in successful cases should be considered, as well as the mortality, in comparing the operation with the various forms of prostatotomy and prostatectomy. So too, should the absence of any risk of permanent fistulæ, peritoneal or suprapubic, and the ease and quickness with which the operation may be performed.

5. The evidence as to unilateral castration is at present contradictory, but there can be no doubt that in some cases it is followed by unilateral atrophy of the prostate, and in two cases at least this has resulted in a

very marked improvement of symptoms. It is worthy of further investigation.

6. Experiments on dogs have shown in nearly every case in which the vas deferens was tied and divided on both sides that without much change in the testicles there was beginning atrophy and considerable loss of weight of the prostate. These experiments need repetition and confirmation, as the absence of corresponding testicular change seems to make the results somewhat anomalous. It is possible that the occlusion or severance of small but important nerves may account for the effect on the prostate.

7. Ligation of the vascular constituents of the cord, or of the whole cord, produces atrophy of the prostate, but in these experiments only after first causing disorganization of the testes.

AT A CLINIC HELD AT THE BELLEVUE HOSPITAL,

DR. LEWIS A. SAYRE presented the patient on whom the first successful excision for hip-joint disease had been performed. He briefly reviewed the history of this operation up to the present time, and showed three other cases that were operated upon many years ago, in each of which the result was most gratifying, complete motion of the joint being secured with but very little if any shortening of the limb.

DR. PHELPS showed several cases of fracture of the patella, and stated that he had operated upon over one-hundred, only two of which had given him any trouble, the results in every other case having been very good, in some cases perfect motion having been obtained at the end of the sixth week.

DR. FRÜHRER showed a large number of instruments that he has devised, and the uses of which he explained at considerable length. Among other instruments shown were several varieties of sounds, drills, probes, and other instruments used in genito-urinary surgery.

DR. ALEXANDER showed a couple of cases illustrating his method of performing prostatectomy. The first case was operated on in 1894, and the advantage claimed for the method was the very small amount of hemorrhage that resulted.

DR. MARKOE presented several cases in which he had removed the spleen, because of pain and enlargement of this organ. In each instance the patients were relieved and improved very much, one having gained no less than thirty-one pounds.

DR. WOOLSEY stated that he had removed a stone from the esophagus of a patient, whom he presented, and that he had operated in a like manner on twenty-eight cases, in all of which recovery ensued.

DR. MEYER detailed the case of a little girl from whom a portion of the upper jaw had been removed for malignant disease, in which the deformity was almost *nil* and only a very slight scar resulted.

DR. F. S. DENNIS showed several cases, including two in which he had operated for sarcoma, one for removal of carcinoma of the breast, one for resection of the hip-joint, and one for ankle-joint disease, in which the lower end of the fibula was removed. In all the results were excellent.

AT A CLINIC AT THE PRESBYTERIAN HOSPITAL,

DR. BRIDDON showed three cases, one in a man suffering from large and extensive infiltration of the glands of the groin on both sides; the second in an Irishman with a tumor on the sternal end of the clavicle and a lump in the stomach, which was thought to be carcinoma; and the third that of a little girl with a very pronounced carcinoma. In the first case a successful operation was performed, but in the second and third nothing of an operative nature had yet been done.

DR. PILCHER showed an interesting case of anterior meningo-encephalitis in a child one year old, upon whom he had performed two operations, each time removing large protrusions in front of the nasal bones. Primary union was secured, and the child bore the operations very well.

Reference was made to the treatment of fractures of the lower extremities and to the possibilities of so applying plaster bandages in cases of fracture below the knee that the weight of the body shall be received upon the parts above the point of fracture, the fracture remaining suspended below. Several cases were presented in which this method had been employed, in each of which the result was very good. Fifteen or twenty cases had been treated by this method; some of the patients were able to walk away from the hospital within a few hours, and continued to walk about without other aid than that of a cane, until the fracture was entirely healed.

DR. J. S. WIGHT, of Brooklyn, showed three cases of carcinoma, all of a very serious nature, and in each of which operation yielded good results. He further showed a case of broken thigh-bone in a patient whose legs were bent directly backward. After repairing the broken thigh-bone the legs were straightened by removing 4½ inches of bone from each one, the effect being that the patient has been able to walk about quite well ever since.

DR. MCCOSH showed several patients, upon one of whom he had recently performed thyroidectomy for exophthalmic goiter, with good effects; another from whom one very large and several small stones were removed from the common bile-duct, with excellent results; a third, upon whom operation had been performed seven days previously for a congenital hernia of the Fallopian tube and ovary, the patient so far having done well; a fourth, with a neoplasm or carcinoma of the cecum, which was incised, the peculiarity about the case being the extreme age of the patient; and a fifth, in whom the diagnosis of possible abscess of the brain was made, which was found upon operation to be the case, and eight ounces of pus were removed.

DR. BROWN showed an instrument that he had devised for perineal section.

SECOND DAY—MAY 29TH.

DR. PILCHER, of Brooklyn, stated that since 1893 it has been demonstrated that after removal of the testicles in aged men a rapid disappearance of prostatic overgrowth takes place in many cases, although this desirable result does not follow in all. Only such enlargements that produce obstruction to the flow of urine become the objects of surgical attention. Glandular elements may preponderate in the enlargement, but muscle-fiber is the chief element, although glandular, muscular, and fibrous elements frequently all take part. The relation of castration to various pathologic conditions is very different, and the sudden obstructions due to congestive accidents, of course, do not

call for castration. If the enlargement is due to fibrous hyperplasia, one would expect comparatively little effect upon the size of the altered prostate from the removal of the testicle. Reference at considerable length was made to two cases of double orchectomy, the one for prostatic hypertrophy in a man seventy-four years of age, and the other for chronic orchitis in a man sixty-seven years of age. In the first case symptoms of prostatic obstruction had been present for twenty years, but the patient had never used a catheter. The man came under observation for temporary complete retention. The bladder was distended to a level four inches above the pubes, and rectal touch demonstrated a greatly enlarged prostate. Both testicles were removed. While the patient was being anesthetized attempts were made to introduce various catheters without success. Primary union took place, and on the sixth day after the operation a catheter was passed with ease, and thirty-two ounces of urine were voided. The patient's general health improved greatly, so that he became able to pass spontaneously about one ounce of urine at a time. Rectal examination shows that the apparent size of the prostate is the same as at the first examination.

The second patient had suffered for fourteen years from anal neuralgia. When a young man he had had double hydrocele, which was cured after tapping. Both testicles were extirpated under chloroform, and as the effect of the anesthetic wore off violent delirium manifested itself. The temperature and pulse rose steadily until the sixth day, when they were respectively 102.5° and 145 per minute. Primary healing of the wound took place, but the patient died from exhaustion on the sixth day.

DR. ARPAD G. GERSTER, of New York, stated that his experience was limited to three operations. In one of these, in a man, seventy-five years of age, fairly well preserved, with a very large prostate, which had been giving trouble for ten years, the result was unfavorable. The other two cases had passed from observation. In the first case the condition became so desperate that something was demanded for relief, and double castration was suggested. The operation was performed with very little loss of blood, and the patient made a good recovery. A copious discharge from the urethra followed, and considerable blood came away in the urine, which apparently flowed from the prostate into the bladder. The patient's condition, however, gradually deteriorated, and he was taken to the operating-room, under the suspicion that there might be an abscess of the prostate, which turned out to be the case. Death ensued on the eleventh day after operation. This case shows that the operation is not so free from danger as some think. Many objections to the operation are raised by men who have never tried it, but it is the duty of all surgeons to investigate the subject.

Two other cases occurred during Dr. Gerster's service at the hospital, the operations being performed by another surgeon. In one of these cases there was an enormously enlarged middle lobe of the prostate, and the man was in agony all the time, but two weeks after operation he was able to void urine without the use of the catheter. One other case was seen in consultation. In this case the patient was, after the operation, able to pass his urine without difficulty.

DR. W. H. CARMALT, of New Haven, said that as an adenoma is primarily the preliminary stage of carcinoma, in conditions of hyperplasia and affections of the prostate causing obstruction it might be well perhaps to prevent the occurrence of carcinoma by castration.

DR. ALEXANDER, of New York, expressed the opinion that the results obtained within a few days after double orchectomy were due largely to the aseptic catheterization by the surgeon and not to the operation. The facts connected with the operations are not reported with sufficient fulness, and the operation is yet to be considered a physiologic experiment.

DR. JOHN H. PACKARD, of Philadelphia, said that one point appeared to be entirely overlooked in this discussion, namely, the stage of the disease at which the operation should be performed. He referred to the case of a very intelligent German, about seventy years of age, who had kept a memorandum of his control of the bladder for every day for four months. Previous to the operation the patient could not hold his urine more than an hour, but one week afterward he held it for three hours, and this time rapidly increased to four and five hours.

DR. THEODORE A. MCGRAW, of Detroit, stated that he was very much impressed with the results of the operation. He cited a case in which ten days after operation the patient was able to pass a large stream. He had also operated on an old man, who immediately thereafter seemed to get some relief, but the trouble returned and the patient died. As to the question whether or not taking out one testicle would have any effect, reference was made to the case of an ex-Governor of Michigan, in whom no effect whatever was produced upon the prostate after one testicle had sloughed completely away.

DR. F. H. GERRISH, of Portland, Me., read a paper entitled

THE RELATIONS OF THE LYMPHATIC SYSTEM TO THE VARIOUS REGIONS.

He stated that there is probably no chapter in anatomy less understood by the average medical man than that devoted to the lymphatic system. The lymphatics are less regular in their course and relations than any other part of the vascular system. Diagrams were presented to show the usual relations between each group of those glands which are accessible to operative procedure. A distinction was made between the parotid and internal maxillary nodes, often included under the former name, the one being situated upon and in the parotid gland, the other on the side of the pharynx just behind the buccinator muscle.

A paper on

THE FEMALE GENITAL ORGANS, INCLUDING THE UTERUS AND VULVA,

by DR. JOHN HOMANS, of Boston, was read by title.

DR. P. S. CONNER, of Cincinnati, read a paper entitled

CARCINOMA OF THE LIP, TONGUE, FLOOR OF MOUTH, AND PHARYNX.

He said that carcinoma is for a time local, and its generalization is practically altogether through the lymphatics. Reappearance in the immediate vicinity of the primary growth is evidence of incomplete removal; in the neighboring glands, failure to discover and remove glands already infected. No operation fulfils

the indication that does not effect the extirpation of the whole disease, but, when from the location and extension, the new-growth cannot be thoroughly removed, that operation is best which, saving life for the time being, secures longest immunity from secondary growths, external and internal.

Carcinoma of the lip commonly affects more or less widely the free border, with a limited infiltration of the underlying tissues. So long as its locality is restricted, it can be safely removed by the ordinary excision of a V-shaped mass, all the diseased area being taken away. In the majority of cases, however, the disease is not thus limited. In a few months after the initial lesion infiltration of a gland or glands under the jaw has generally taken place. To this secondary lymphatic disease is due the great majority of the 60 or 65 per cent. of failures to effect a cure. In all cases in which any enlarged gland, be it ever so small, can be felt it should be cut down upon and removed.

Carcinoma of the tongue is seen in about one-tenth of all the subjects of carcinoma. Glandular enlargement is generally present and develops early. The end-result of operations has been far from satisfactory, the mortality being high and recurrence very constant.

The diagnosis once established, free excision of the affected area should be effected without delay, so that glandular involvement may possibly be prevented. Even if the malignancy of the ulcer or the tumor is questionable, but little time should be lost in removing the doubt. Far better that now and then a tuberculous or syphilitic tongue should be unnecessarily operated upon than that a carcinoma should be allowed widely to extend its area. The best method of operating must be determined by the conditions of the individual case. When the growth has existed but a short time, and is located in the free portion of the tongue, ablation of that portion should be effected with the knife, or, better, the scissors. Any operation through the mouth, unless performed very early and for a limited disease of the tip or possibly of the side of the tongue, should be supplemented by an exploratory incision in the submaxillary region and the removal of enlarged glands. If, however, the percentage of recoveries is to be materially increased, operation in this region must be thorough and complete, and the tongue should be approached through the neck and the floor of the mouth, as along such route only is it practicable to reach all the infected tissues. Hemorrhage can be reduced to a minimum by ligating the vessels as they are reached, especially the linguals, or by the use of hemostatic forceps and ligations in the wound. The advantages of extra-buccal operations are the more thorough drainage thus secured and the greater facilities afforded for maintaining approximately a septic condition of the wound.

Carcinoma of the pharynx, other than by direct extension from contiguous parts, is rare, and affects almost entirely the soft palate or the tonsils. When secondary and associated with grave disease of the tongue or cheek, operative interference is, as a rule, useless, and can only hasten the necessarily fatal termination of the case. If primary and confined, it can be readily removed by scissors or cautery, and if early and widely done such extirpation is not unlikely to secure exemption from recurrence.

(To be concluded.)

THE FORTY-FIFTH ANNUAL MEETING OF THE MEDICAL SOCIETY OF THE STATE OF PENNSYLVANIA.

Held at Chambersburg May 21, 22, 23, and 24, 1895.

(Continued from page 625.)

DR. J. M. BALDY, of Philadelphia, read a paper on the

PROPHYLAXIS OF PELVIC INFLAMMATIONS IN WOMEN.

The main cause of pelvic inflammation is gonorrhea of the gravid or non-gravid uterus. The only prophylactic treatment is to attack the gonorrheal disease before involvement of the tubal mucosa has occurred. Even after this does take place rigorous treatment of the original site of the disease will often abort a pelvic attack. Puerperal sepsis is the second great cause of pelvic inflammations. As soon as fetid lochia and other signs of beginning sepsis are noted the uterus and vagina should be thoroughly washed out and curetted. Gauze, if introduced into the uterus, will prevent the danger of further infection from the vagina, but does not act as a drain from above.

DR. SAMUEL D. RISLEY, of Philadelphia, read a paper on

OCULAR AFFECTIONS ASSOCIATED WITH LITHEMIA.

The lithemic diathesis stands second to syphilis only in the number of its victims. He has repeatedly encountered cases in which the entire trouble disappeared under antilithemic treatment. It can hardly be supposed that the eye-vessels will escape the general involvement of the vascular system of the body.

DR. H. R. WHARTON, of Philadelphia, read a papet on

THE TREATMENT OF NEVUS.

The varieties of nevus most commonly met are the capillary, the port-wine mark, a form of the capillary of some size, and the venous nevus, of purple or bluish color, and at times containing blood-cysts. All forms of vascular tumors in young children should be carefully watched, and if any increase in size be noted they should be operated upon. In cases of capillary nevus cauterization with nitric acid by means of a match-stick may answer. Electrolysis is also of service in the treatment of this form. The treatment of the port-wine mark is by multiple incision. In the treatment of venous nevus various methods have been employed. The elastic bandage may be used to control the hemorrhage and the tumor be excised. If very large, harelip-pins may be passed under the tumor and a ligature applied. This is followed by sloughing, granulation, and cicatrization. Dr. Wharton has used the subcutaneous ligature with good results. If ulceration has occurred, the actual cautery or the galvano-cautery must be employed.

DR. ERNEST LAPLACE, of Philadelphia, presented a

REPORT OF ONE-HUNDRED AND TWENTY-FIVE CASES OF HERNIA IN WHICH THE RADICAL CURE WAS PERFORMED.

He uses a portion of the sac to act as a plug, excising the rest. In large sacs he lays open the lesions, closes the ring, and packs with iodoform-gauze. He does not believe in following any one method. The ring he always considers as a wound through the abdominal

wall, which it is his duty to close, either by sutures or by plugging with omentum or portion of the sac. There were two deaths in his series, one from strangulated umbilical hernia in a fat woman, and the other from hemophilia and leukemia. Bassini's method is safe and sure, and prevents all danger of strangulation.

DR. THOMAS J. MAYS, of Philadelphia, read a paper on

FAT IN PULMONARY CONSUMPTION.

The proteids, he said, are of greater value in the production of fat in the body in "consumption" than they were formerly thought to be. The fats ingested do not go to form fat. Beef-juice, mutton, lamb, eggs, milk are all better fat-producers. Melancholia has a special tendency to run into tuberculosis, while fat is inimical to mental despondency. Strychnin with suitable rest and appropriate food is the best treatment for incipient tuberculosis. The proteids and carbohydrates are superior to fats in the production of fat, and the fats are overestimated in this respect.

By invitation DR. THOMAS S. CULLEN, of Baltimore, Md., read a paper on

CARCINOMA OF THE UTERUS.

There are three varieties of carcinoma of the uterus: 1. Epithelioma, involving the squamous epithelium and extending down into the vagina. 2. Adeno-carcinoma in the cervical canal, extending laterally and so gravely involving the tissues of the cervix that the latter become soft and friable, and may pull off. This is the most dangerous variety and the most rapid in growth. 3. That involving the epithelium of the fundus. This is the most favorable form. Pieces of the cervix for microscopic examination should be placed in a 10 per cent. solution of formalin.

RUPTURE OF THE TENDON OF THE QUADRICEPS EXTENSOR FEMORIS

was the title of the paper by DR. J. J. BUCHANAN, of Pittsburg. This is a comparatively rare accident. There are only about 120 cases reported. In reporting such cases the nature of the lesion should be well described, the site of rupture noted, as well as the length of the rupture, the degree of separation, and the amount of permanent disability. An imperfect result occurs in about one-half of all cases. The indications for treatment are the same as for fracture of the patella. The application of buried sutures is the ideal method of treatment, but too few cases so treated are on record to arrive at any definite conclusions. Two classes of cases may be described: 1. Rupture of the central portion of the tendon. 2. Those cases in which the expansions of the vasti muscles are also torn. This latter class is usually followed by poor results, even under the best of surgical treatment. The open incision is probably better here.

DR. L. J. LAUTENBACH read a paper entitled

DEAF-MUTES—CAN ANYTHING BE ACCOMPLISHED BY TREATMENT?

He treats such cases by massage applied to the drum-head and external meatus. This massage he divides into three classes: Pneumo-massage, phono-massage, and the mixed massage. Pneumo-massage is the employment of distention of the internal ear. He reports excellent results following this method in cases considered as hopelessly deaf. Even when all ear-tests fail a negative prognosis must not be given.

Among the other interesting papers noted were the following:

EXPERIENCE IN THE TREATMENT OF DIPHTHERIA DURING THIRTY-FOUR YEARS OF PRACTICE,

by DR. WILLIAM S. STEWART, of Philadelphia;

THE PRESENT STATUS OF THE SANITARY MOVEMENT FOR THE ADOPTION OF THE INDIVIDUAL COMMUNION-CUP,

by DR. H. S. ANDERS, of Philadelphia;

DIAGNOSIS AND TREATMENT OF ACUTE INTESTINAL OBSTRUCTION,

by DR. JAMES M. BARTON, of Philadelphia;

THE ADDRESS IN HYGIENE,

by DR. HILDEGARDE H. LANGSDORF, of Carlisle;

TEN MINUTES IN MEDICAL ELECTRICITY,

by DR. GEORGE S. HULL, of Chambersburg;

NECESSITY FOR THE ADVERTISEMENT AND ISOLATION OF CERTAIN CONTAGIOUS AND INFECTIOUS DISEASES,

by DR. F. LE MOYNE, of Pittsburg;

REPORT OF A SERIES OF CASES OF LARYNGEAL DIPHTHERIA TREATED WITH THE ANTITOXIN, WITH AND WITHOUT INTUBATION,

by DR. EDWIN ROSENTHAL, of Philadelphia (see p. 633);

ANOTHER WORD ON ADENOID GROWTHS OF THE PHARYNX,

by DR. HARRISON ALLEN, of Philadelphia;

THE ADDRESS IN OBSTETRICS,

by DR. W. B. ULRICH, of Chester;

THE ADDRESS IN SURGERY,

by DR. C. L. STEVENS, of Athens;

THE ADDRESS IN OTOLOGY,

by DR. L. H. TAYLOR, of Wilkesbarre;

THE ADDRESS IN MENTAL DISORDERS,

by DR. F. X. DERCUM, of Philadelphia;

THE MENTAL INFLUENCE IN THE TREATMENT OF DISEASE,

by DR. THEODORE DILLER, of Pittsburg;

DIAGNOSIS OF GASTRIC LESIONS BY MODERN METHODS,

by DR. S. SOLIS-COHEN, of Philadelphia.

AMERICAN PEDIATRIC SOCIETY.

Seventh Annual Meeting Held at Hot Springs, Virginia, May 27, 28, and 29, 1895.

FIRST DAY—MAY 27TH.

THE PRESIDENT, DR. F. FORCHHEIMER, of Cincinnati, read his annual address, in which he quoted from the work of Donovan, written in the latter part of the eighteenth century, and drew comparisons between the views of that author upon the management and treatment of children and those held at the present day.

DR. T. M. ROTCH, of Boston, reported a case of cerebro-spinal meningitis in an infant six days old.

DR. WILLIAM F. LOCKWOOD, of Baltimore, reported

three cases of purulent otitis media in children ending fatally from cerebral involvement, or sinus-involvement, or from general pyemic infection.

A case of pyo-pneumothorax was reported by DR. WALTER L. CARR, of New York, the succussion-splash being impossible of development.

DR. S. S. ADAMS, of Washington, reported a case of traumatic aphasia in a boy, echolalia being the form of aphasia presented, without further cerebral symptoms. Recovery ensued in spite of intercurrent attacks of scarlatina anginosa and croupous pneumonia.

A series of cases of hyperpyrexia was reported by DR. HENRY D. CHAPIN, of New York.

Three specimens of sarcoma occurring in children were shown. DR. J. HENRY FRUITNIGHT, of New York, reported and showed the specimen from a case of sarcoma of the kidney. The propriety of and necessity for early operation were prominently brought out in the discussion upon the paper.

DR. AUGUSTUS CAILLÉ, of New York, showed a specimen of sarcoma of the left suprarenal capsule from a newly born infant. Hemorrhagic degeneration of the center of the growth had formed a cyst-like cavity in the interior. Owing to the size and position of the growth its differentiation from an enlarged spleen might during life have been a matter of considerable difficulty.

The third specimen was one of lympho-sarcoma of the spleen presented by DR. GEORGE N. ACKER, of Washington.

DR. F. GORDON MORRILL, of Boston, opened the discussion on the use of the diphtheria-antitoxin, with a paper upon the efficiency of the remedy as an immunizing agent, and related the histories of a large number of cases wherein its use had prevented the occurrence of endemics of diphtheria in hospital practice.

DR. AUGUSTUS CAILLÉ, of New York, followed with a paper based upon the results obtained in his personal experience by the use of curative injections, and also reported, without comment, five cases of marasmus or hereditary syphilis wherein death followed shortly after the injection by another physician of equine serum. In one case the superficial lesions of hereditary syphilis rapidly disappeared between the time of injection of the serum and the fatal ending.

DR. A. SEIBERT, of New York, then read a paper upon the value of the antitoxin of diphtheria and its toxic after-effects.

In the general discussion that followed the reading of these papers additional evidence of the value of the remedy was advanced, one of the speakers, however, condemning its use as being not only inefficient but actually harmful. The weight of argument lay decidedly in favor of its continuous employment.

DR. E. M. BUCKINGHAM, of Boston, read a paper entitled

CASES APPARENTLY DIPHTHERIA, BUT IN WHICH THE DIPHTHERIA-BACILLUS IS NOT FOUND.

SECOND DAY—MAY 28TH.

The topic allotted for consideration was

THE DIFFERENT FORMS OF ERUPTION WHICH SIMULATE SCARLATINA AND THEIR DIFFERENTIAL DIAGNOSIS.

DR. A. D. BLACKADER, of Montreal, discussed the various forms of eruption that resembled that of scarlatina, including the drug-eruptions and those due to other systemic diseases. DR. CHARLES G. JENNINGS, of Detroit, related cases of scarlatiniform exanthem. DR. LOUIS STARR, of Philadelphia, reported several cases of scarlatina that presented but poorly marked constitutional disturbance, although the eruption was intense and characteristic. Two cases of marked redness with purplish tinge in the skin after desquamation were dwelt upon, and water-colors of one of them with a photograph of glove-like exfoliation of the epiderm were shown. DR. JAMES C. WILSON, of Philadelphia, reported a case of marked symmetrical gangrene occurring in the course of scarlatina, and referred to two other cases from the literature of the subject. DR. J. P. CROZER GRIFFITH, of Philadelphia, requested that his paper might be read by title, as the division of the subject allotted to him, "Difficulty in Differential Diagnosis," had been practically covered by earlier speakers. He remarked upon the close resemblance between the photograph showing glove-like exfoliation, that was exhibited by Dr. Starr, to the photographs of acute exfoliating dermatitis accompanying an article by Blanc in a volume of the *International Clinics*.

DR. A. SEIBERT, of New York, read a paper upon

THE LOCAL TREATMENT OF THE SKIN IN THE ERUPTIVE FEVERS OF CHILDREN,

in which he advocated the use of ointments containing ichthyol, although no specific constitutional effect was claimed for its use.

In the general discussion that followed, the fallibility of all of the classic text-book symptoms as a guide to the diagnosis of scarlatina was emphasized.

DR. L. EMMETT HOLT, of New York, read a paper upon

INANITION-FEVER IN THE NEWLY BORN,

and related cases illustrating the condition. The main argument of the paper was the necessity for taking the temperature of the child as well as that of the mother, and the necessity for administering water and a suitable amount of nourishment to children insufficiently nourished by the mother. The temperatures attained were in some cases quite high. The administration of water and of suitable quantities of proper nourishment rapidly caused a fall of temperature to normal.

In the discussion that followed, the need of flushing out the system, and especially of ridding the kidneys of uratic infarcts by the use of water, was insisted upon, and the view was advanced that the temperature-rise was due, not to inanition or to the infection of the digestive tract by micro-organisms, but was caused by the retention of waste products within the organism.

DR. HOLT, in reply, stated that he had used the term inanition-fever owing to lack of a more definite term, but that he did not doubt that the explanation of the etiology given in the discussion might be the correct one.

DR. B. K. RACHFORD, of Cincinnati, read a paper entitled

REFLEX IRRITATION AS A CAUSE OF NEUROTIC DISEASE IN CHILDREN.

He did not agree in the view recently gaining ground that peripheral irritation had in past times been held in too great prominence as a cause of nervous disturbances, and summarized the physiologic and histologic

work done upon the question of nerve-cell tire and consequent instability of nerve-centers.

DR. A. JACOBI, of New York, reported and showed photographs of a case of pygopagus. The twelve preceding cases reported in the past four-hundred years were briefly described.

DR. WILLIAM OSLER, of Baltimore, reported two cases of adherent pericardium in children, with enormous heart-hypertrophy, chronic proliferative peritonitis, and recurring ascites.

A specimen of traumatic rupture of the bladder was shown by DR. JOHN DORNING, of New York.

The following cases of congenital heart disease were reported and specimens of most of them shown: Cor biloculare; heart with pulmonary veins opening into the right auricle, imperfect ventricular septum in a man aged forty-five years, by DR. WILLIAM OSLER; aorta arising from the right auricle, by DR. GEORGE N. ACKER, of Washington; patent ventricular septum, by DR. A. JACOBI, of New York; congenital endocarditis, by DR. CHRISTOPHER, of Chicago; imperfect closure of auricular and ventricular septum in the heart of a man dying at the age of forty-five years, by DR. FREDERICK A. PACKARD, of Philadelphia; and a case of congenital deformity of the heart, by DR. L. EMMETT HOLT, of New York.

MORNING SESSION—MAY 29TH.

DR. DILLON BROWN, of New York, showed and described a new extractor for the removal of intubation tubes.

DR. AUGUSTUS CAILLÉ, of New York, read a paper upon

TAPPING THE VERTEBRAL CANAL IN THE LUMBAR REGION,

in which a brief review of the literature of the method was given. An anatomic preparation of the lumbar vertebræ was shown to illustrate the ease with which the operation could be performed.

The characteristic features of the recent epidemic of influenza (1894 and 1895) were discussed, the discussion being opened with papers by DR. L. EMMETT HOLT, of New York, and DR. A. D. BLACKADER, of Montreal. In the discussion of the subject the importance of more general disinfection of rooms after attacks of the disease and removal of convalescent patients from the room occupied during the illness was urged.

The following papers were read by title: "Tetanus Neonatorum," by DR. J. LEWIS SMITH, of New York; "Infantile Tetany," by DR. M. P. HATFIELD, of Chicago; "Tetany (Two Cases)," by DR. FLOYD M. CRANDALL, of New York; "Tetanus Neonatorum," by DR. IRVING M. SNOW, of Buffalo; "Typhoid Fever in Infants under Two Years—Is it Frequent?" by DR. WILLIAM PERRY NORTHRUP, of New York; "Cases of Scurvy," by DR. A. JACOBI, of New York; "Case of Ossified Cephalhematoma," by DR. F. HUBER, of New York.

On motion of the Society, it was decided that the next annual meeting be held at Montreal in the latter part of May, 1896.

NEWS ITEMS.

Munificent Endowments for the University of Pennsylvania.—By the will of Mr. E. A. W. Hunter, a retired business man, who died at Berwyn, near Philadelphia, on May 28th, about $500,000 will revert to the University of Pennsylvania upon the death of the widow and an only child. The principal of the bequest is to be used for the establishment of a surgical ward in memory of the late Dr. D. Hayes Agnew and a son of the testator, Dr. Charles Hunter, who died several years ago.

Mrs. Thomas A. Scott has donated to the University the sum of $5000, to be used in fitting up a surgical amphitheater in the new Agnew pavilion, to be known as the "Thomas A. Scott Amphitheater."

Mr. Charles C. Harrison, who for a year has been acting provost, and who has been elected provost, has offered to create a fund of $500,000 for the University in memory of his father, the late George Leib Harrison, and to be known as the George L. Harrison foundation for the encouragement of liberal studies and the advancement of knowledge.

Gross Monument.—The statue to be erected to the memory of the late Professor Samuel D. Gross is now under contract, and the artist, Mr. Calder, is at present in Europe with his models arranging to have it cast in bronze. The models were inspected by Mr. St. Gaudens, the distinguished American sculptor, and approved as being very fine. Congress has appropriated $1500 for the expenses of the foundation, and authorized the engineer corps of the army to select the site for its erection. The place selected is in the Smithsonian grounds at Washington, near to the Army Medical Library. The statue is to be of standard bronze, representing Dr. Gross holding a scalpel in his right hand, and in the act of operating at a clinical lecture. It is to be nine feet high and upon an appropriate pedestal. The money has all been secured through the joint efforts of Drs. J. R. Weist, W. W. Keen, and C. D. Mastin, representing the American Surgical Association and the Medical Alumni Association of Jefferson Medical College.

National Association of State Medical Examining and Licensing Boards.—A permanent national organization of the various State Medical Examining and Licensing Boards was effected at the American Medical Association meeting, May 9, 1895, at Baltimore, Md. Officers were elected for the ensuing year as follows: *President*—W. W. Potter, M.D., Buffalo, N. Y.; *Vice-President*—J. M. Hays, M.D., Greensboro, N. C.; *Secretary*—B. M. Griffith, M.D., Springfield, Ill. *Committee to Draft Constitution and By laws*—Charles McIntire, M.D., Easton, Pa.; W. W. Potter, M.D., Buffalo, N. Y.; N. Payne, M.D., Albany, N. Y.

The purposes of the Association are to establish a uniform schedule of requirements for all medical colleges and examining boards, and assist in perfecting a method for higher medical education.

Dr. J. Marshall Hawkes, of New York City, died May 26, 1895, of osteitis of the mastoid bone following an acute attack of purulent inflammation of the middle-

ear. Dr. Hawkes was well known on account of his work in orthopedic surgery, notably for his paper spinal jacket. He was born in Gorham, Mass., in October, 1847; served a year-and-a-half in the late war with the Fourth Maine Battery, and later entered Dartmouth College, N. H., where he first began to study medicine. He was a graduate of the College of Physicians and Surgeons of New York City, and an active member of the County Medical Association of New York. He was also a member of the G. A. R. and a Mason.

The Mississippi Valley Medical Association will hold its twenty-first annual meeting at Detroit, Mich., September 3, 4, 5, and 6, 1895. Assurances have been received from the railroad companies that one fare for the round trip will be the rate. Dr. William Pepper, of Philadelphia, will read the annual address on "Medicine."

Zeitschrift fur Sociale Medicin is the title of a new publication dedicated to the advancement of the general interests of the medical profession. It is edited by Sanitatsrath Oldendorff, of Berlin, and published by George Thieme, of Leipsic.

Diphtheria-antitoxin.—At the recent meeting of the American Pediatric Society at Hot Springs, Va., a resolution was adopted that the evidence thus far produced regarding the effects of diphtheria-antitoxin serum justifies its further and extensive trial.

The Colorado State Medical Society will hold its next annual meeting at Denver, June 18, 19, and 20, 1895. An interesting and elaborate program has been prepared.

The Tri-State Medical Society of Illinois, Iowa, and Missouri will meet at Des Moines, Iowa, October 1–4, 1895.

Prof. E. Behring has succeeded Prof. Carl Fraenkel in the chair of hygiene at the University of Marburg.

Professor Carl Ludwig, the distinguished physiologist, of Leipsic, died on April 24th.

The American Medico-psychological Association will hold its next annual meeting at Denver, Col., June 11th–15th.

BOOKS AND PAMPHLETS RECEIVED.

Thirteenth Annual Report of the Associated Charities of the District of Columbia for the year ending November, 1894. Washington, D. C.: Judd & Detweiler, 1894.

Ueber Temperaturdifferenzen beider Körperhälften in Folge von bestimmten Verletzungen des Gehirns. Von Prof. Dr. M. Schüller. Separatabdruck aus dem Aerztlichen Central-Anzeiger, Wien, 1894.

Ligature of the Spermatic Cord in the Treatment of Hypertrophy of the Prostate Gland. By J. Ewing Mears, M.D. Pamphlet, 1894.

Caries of the Spine followed by Compression of the Cord. By J. T. Eskridge, M.D. Reprinted from the New York Medical Journal, 1894.

A Remarkable Case of Suppurative Otitis with Hemiplegia. By Arthur H. Coe, M.D. Reprinted from the Medical Sentinel, 1894.

Rest in Bed as a Resource in the Treatment of Chronic Non-suppurative Catarrh of the Middle Ear. By A. Britton Deynard, M.D. Reprinted from the Post-Graduate.

Monocular Neuro-retinitis, with Cases. By B. L. Millikin, M.D. Reprinted from the Western Reserve Medical Journal, 1894.

The Medical Society of the District of Columbia in 1894, with some Important Recommendations. Annual Address of the President, delivered by Samuel C. Busey, December 19, 1894. Washington: Gibson Bros., 1894.

The Nature and Treatment of Leprosy. By R. H. L. Bibb, M.D. Reprinted from the American Journal of the Medical Sciences, 1894.

Atheroma. By W. Ainslie Hollis, M.D. (Cantab.), F.R.C.P. (Lond.). Reprinted from the Journal of Pathology and Bacteriology, 1894.

Gynecology in Bagdad. By John C. Sundberg, M.D. Reprinted from the American Gynecological and Obstetrical Journal, 1894.

Annual Report of W. A. Gordon, M.D., County Physician of Winnebago County, Wis. Oshkosh, Wis.: The Hicks Printing Co.

The Treatment of Corneal Ulcer by the General Practitioner. By S. Lewis Ziegler, M.D. Reprinted from the New York Medical Journal, 1894.

Tuberculosis of the Fallopian Tubes. By Charles B. Penrose, M.D., and H. D. Beyea, M.D. Reprinted from the American Journal of the Medical Sciences, 1894.

The Work of the Gynecological Clinic of the Hospital of the University of Pennsylvania, 1893–1894. By Charles B. Penrose, M.D. Reprinted from the University Medical Magazine, 1894.

A Case of Foreign Body (Gold Coin) Engaged in the Ventricles of the Larynx. By A. W. de Roaldes, M.D. Reprinted from the New York Medical Journal, 1894.

Bromid of Ethyl as an Anesthetic in Oto-laryngological Practice. By A. W. de Roaldes, M.D. Pamphlet. New Orleans, 1894.

United States Bureau of Education, Circular of Information. No. 1, 1894. Contributions to American Educational History. Edited by Herbert B. Adams. No. 18. History of Higher Education in Rhode Island. By William Howe Tolman, Ph.D. Washington: Government Printing Office, 1894.

A Case of Compound Follicular Odontoma Invading the Right Antrum of Highmore and Obstructing the Corresponding Nasal Fossa. By A. W. de Roaldes, M.D. Reprinted from the New York Medical Journal, 1894.

Fourth Report of the State Board of Health of Colorado; Including the Reports for the Years 1892, '93, and '94. Denver: The Smith-Brooks Printing Co., 1894.

Intestinal Anastomosis, with the Report of a Case. By Frederick Holme Wiggin, M.D. Reprinted from the New York Medical Journal, 1894.

The Prevention of Epidemics and the Construction and Management of Isolation Hospitals. By Roger McNeill, M.D. Edin., D.P.H. Camb. With illustrations. Philadelphia: P. Blakiston, Son & Co., 1895.

A Manual of Organic Materia Medica and Pharmacognosy. An Introduction to the Study of the Vegetable Kingdom and the, Vegetable and Animal Drugs. By Lucius E. Sayre. With 543 illustrations. Philadelphia: P. Blakiston, Son & Co., 1895.

The Parasites of the Skin. By J. Abbott Cantrell, M.D. Reprinted from the American Lancet, 1894.

Consumption: Its Causes and Treatment. By J. P. Koonse, M.D. Reprinted from the American Therapist, 1894.

Operative Treatment of Myofibroma Uteri. By N. Senn, M.D., Ph.D., LL.D. Reprinted from the Chicago Medical Recorder, 1894.

Notes on a Few Clinical Experiences of Inherited Syphilis. Seborrhea. By Burnside Foster, M.D. Reprinted from the Northwestern Lancet, 1894.

Removal of the Head of the Femur for the Lesser Sciatic Notch. By B. Merrill Ricketts, M.D. Reprinted from the Times and Register, 1894.

The Removal by Trephining of Fluid as the Result of Acute Cerebral Meningitis, with Report of a Case. By B. Merrill Ricketts, M.D. Reprinted from the Times and Register, 1894.